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ABSTRACT

Five policy papers address methods of funding vocational/special education and relative benefits versus expenditures for different employment training systems for moderately and severely handicapped persons. The first paper critiques the present vocational education funding system for handicapped students. Federal funding mechanisms, state and local matching of set-aside funds, and problems in complying with legislative mandates are discussed. Tentative suggestions for improvement are offered. The second paper reports Abt Associates study findings regarding the impact of the 1976 Vocational Education Amendments on services to special needs populations. Patterns of expenditure of set-asides for special populations are highlighted. The third paper proposes changes in the Vocational Education Act to clarify and simplify the present law and make federal spending for vocational education more effective. It calls for centralization of purpose and decentralization of process in delivering vocational education. The fourth paper reports an investigation to determine whether the costs and benefits of the train-place-train approach to competitive employment are comparable to the costs and benefits of individuals working in extended, sheltered employment. The fifth paper reports an analysis of several cost and benefit dimensions associated with Project Employability, a job placement program for moderately and severely handicapped individuals. (YLB)

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Funding and Cost Analysis

Policy Paper Series: Document 8

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FOREWORD

The mid and late 1970's were characterized by the enactment of new, major legislative mandates in the education and employment of handicapped individuals. Public Law 94-142 and Sections 503 and 504 of the Rehabilitation Act of 1973 have had profound effects upon educators and employers. In response to these mandates, a number of diverse programming approaches and policies have been implemented by vocational and special educators, and vocational rehabilitation personnel at the state and local levels.

The Leadership Training Institute (LTI)/Vocational and Special Education was established to assist state leadership personnel in improving and expanding vocational education opportunities for handicapped learners. The project is supported by a grant from the Division of Personnel Preparation, Office of Special Education, U.S. Education Department. Through the project, emerging legislative issues and priorities pertaining to vocational education for handicapped learners have been addressed in regional leadership training institutes. Through March, 1981, eight institutes had been conducted throughout the nation addressing a variety of key issues.

This series of policy papers and research reports on Funding and Cost Analysis derives its impetus, in large measure, from the eighth and last Leadership Training Institute held in Arlington, Virginia, on March 22-24, 1981. A comprehensive literature review and a small scale needs assessment survey identified a number of major concerns in this area such as legislative and regulatory issues and state planning.

Several recognized leaders in the field of special education, vocational education, and educational finance have contributed to this policy paper series. It is a pleasure to share the insightful and cogent manuscripts

through the production of this volume. The LTI is indebted to the authors for their excellent contributions--Donald W. Drewes, Conserva Corporation, Dr. Vernon Beuke, Cornell University, Dr. Charles Benson, and Gareth Hoachlander, University of California-Berkeley, Dr. Paul Wehman and Mark Hill, Virginia Commonwealth University, and Ken Schneider, Dr. Frank Rusch, Dr. Robert Henderson, and Dr. Terry Geske, University of Illinois.

Dave Larkin and Brian Cobb, staff of the LTI, have done an outstanding job in planning and editing this volume. Their efforts are much appreciated. Dr. Janet Treichel, Training and Dissemination Coordinator, was instrumental in the production and dissemination of each of the policy paper series. A special note of appreciation is extended to Ms. Alicia Bollman for her assistance in typing and proofing the final manuscript.

L. Allen Phelps, Director
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PREFACE

Advocacy groups and educators, as well as federal legislation have recently attempted to improve the employment possibilities for handicapped young persons. Vocational education, special education, vocational rehabilitation, and the Comprehensive Employment and Training Act (CETA) have all been the recipients of federal funds allocated for this purpose. Unfortunately the level of employment for handicapped young Americans continues to present a major problem for the nation.

A major piece of legislation currently directing vocational education for handicapped youth is Public Law 94-482. A section of this law provides for funds specifically serving handicapped students. Reauthorization of this law will take place in the near future and represents an extremely important commitment to handicapped individuals. Three of the presentations contained in this monograph address the funding issue in an insightful and thoughtful manner and provide for an increased understanding of this matter of current importance and interest.

It is difficult to fully measure the costs associated with the unemployment of many of our handicapped citizens. Many of us believe these costs to be exorbitant and, more importantly, largely unnecessary. While it is difficult to measure the costs of unemployment it would seem to be easier to measure the costs of education. However, such measurement is surprisingly difficult. Far more difficult to measure are the benefits of education and the relationship between costs and benefits. The evaluation of the relationships existing between costs and benefits is certainly one of the most difficult evaluations that educators undertake. Because both costs and benefits possess a large number of variables and ramifications it seems unlikely that a complete and total study can ever be accomplished.

Certainly there is no "best" educational blueprint for all learners. What we do look for are characteristics of certain programs that seem to move in the direction of maximal benefits based on reasonable costs. Benefits are frequently measured in monetary terms, yet other benefits are likely to result. Such benefits, often termed "ancillary", are difficult to measure in monetary terms and generally seem to defy definitive criteria. In times of economic abundance they tend to be viewed as possessing more importance than they possess in times of economic turmoil or trouble.

You will find that the studies presented in this monograph base their suggestions largely on financial criteria, but convey many implications regarding the ancillary benefits. There seems to be good reason to suspect that the costs associated with large numbers of unemployed (whatever those costs may presently be) will continue to increase. This seems to be particularly significant when considering the prediction, made by prominent educators in the field, of a coming shortage of young workers. As editors we believe this collection of cost/analysis materials to be potentially very valuable. The data, techniques and ideas presented will help to form the skills and attitudes necessary for providing a larger proportion of handicapped workers with employment that is rewarding to employee and employer alike. That would be a development from which we would all benefit.

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Vocational Education Funding for Handicapped Students: Many Issues and Some Tentative Suggestions

by

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A guest lecturer once described funding as "where the rubber hits the road." The application to the funding of handicapped programs is direct. Whereas rhetoric and good intentions may abound, they remain but empty promises unless sufficient resources are committed to make them a reality.

It is the purpose of this paper to critique the present funding system and to offer tentative suggestions for possible improvement. The critique of the present system will include a description of the present federal funding mechanisms, an analysis of state and local matching of handicapped set-aside funds and a discussion of the problems that states and localities are experiencing in attempting to comply with legislative mandates. The second part of the paper will offer some tentative suggestions for improvement. These suggestions are offered in the context of fiscal conservatism that is anticipated to shape the course of social programming for the intermediate future.

The Current Mandate

Legislative authority for federal assistance to vocational education is provided by Title II of the Education Amendments of 1976 (P.L. 94-482). Title II will hereafter be referred to as "the Act."

The Act is divided into two major parts: Part A and Part B. Part A pertains to state vocational education programs, whereas Part B is devoted to national programs. Each part is divided into subparts. Since only Part A has relevance for analysis of financial assistance to the states, no further mention will be made of Part B.

Part A of the Act consists of the following subparts:

- Subpart I--General Provisions
- Subpart II--Basic Grants
- Subpart III--Program Improvement and Supportive Services
- Subpart IV--Special Programs for the Disadvantaged
- Subpart V--Consumer and Homemaking Education

With the exception of Subpart I, each of the subparts provides authorization for a specific grant-in-aid to the states.

Funds are distributed to the states according to an allocation formula. The allocation formula is a function of state total population in three age categories and the per capita income of each state in relation to the national per capita income. Separate authorizations are provided for Subparts II and III, IV and V. An additional separate authorization provides for state planning, preparation of accountability reports, statewide evaluations and state administration of vocational education programs. The same allocation formula is used to allot funds to states under each of the four authorization categories.

The Act requires that each state receiving funds under the Act use at least ten percent of the funds received to pay 50 percent of the cost of providing vocational education to handicapped persons. The restriction that ten percent of funds received be used for a designated purpose is referred to as a set-aside. In addition to the 10% set-aside for programs serving

handicapped students, the Act provides for set-asides for disadvantaged and for post-secondary vocational education. The disadvantaged set-aside is further subdivided to include those of limited English-speaking proficiency. The set-asides for handicapped, disadvantaged and postsecondary collectively are referred to as national priority programs.

States receiving assistance under the Act are required to pay at least 50 percent of the cost of providing vocational education to handicapped persons from state and/or local funds. That is to say, the states must match the federal contribution on at least a dollar-for-dollar basis. Thus, this stipulation has come to be known as the "matching requirement." Some exceptions to the matching requirement are programs that provide for the participation of students enrolled in nonprofit private schools and programs funded under Subpart IV. In these instances, the Act allows for full reimbursement of cost from federal funds.

Handicapped persons are defined by the Act as those who have a physical, mental or other health impairment that prevents them from succeeding in regular vocational education programs without special assistance. Thus, "handicapped" under the Act is regarded as a performance-based inability to succeed without special assistance rather than a personal disability of an individual. By virtue of this definition, handicapped is a relative classification depending upon individual performance capabilities and program requirements. A person is handicapped only if that person cannot meet a specific set of requirements. Given a change in the performance criteria, the handicap may vanish.

Consistent with this definition of handicapped, the Act requires that handicapped set-aside funds be used only to pay for the cost of providing special assistance to handicapped persons so as to allow them to succeed in

regular vocational education programs. In those instances where they are unable to succeed in regular programs even with the provision of special assistance, federal funds can be used to provide for separate programs. The stipulation that federal funds be used only to pay for services above and beyond those regularly provided is referred to as the "excess cost" proviso.

The excess cost proviso and the matching requirements dictate that state and local contributions must be used on at least a dollar equivalency with federal funds to pay for the cost of special services provided to handicapped persons. According to the regulations, state and local expenditures in excess of the matching requirements for other parts of the Act cannot be used to meet the matching requirements for the added cost of programs serving handicapped students. The implication is that each federal dollar used to provide special services to handicapped individuals must be accompanied by a state or local dollar spent for the same purpose.

Once a state has made a financial commitment to support vocational education, it must maintain that commitment on either an aggregate or per pupil basis. This condition is known as "maintenance of effort." Maintenance of effort can be achieved with no more than a five percent reduction from previous expenditures. Thus the implication for the funding of vocational programs for handicapped students is that once a state makes an investment in these programs, it must maintain that investment on an aggregate or per pupil expenditure basis with no more than a five percent annual decrement.

The State Response

A measure of state responsiveness to national priority programs is provided by an analysis of the ratio of state and local dollars expended in

federal dollars expended. A listing of the ratio of state/local to federal expenditures ranked by magnitude of the ratio is presented in Table 1.

Table 1
State/Local: Federal Matching Ratios for
Handicapped Set-Asides Ranked by Size of Ratio.¹

High:	\$13.79	1.50
	13.32	1.43
	9.98	1.41
	9.88	1.39
	4.99	1.34
	4.80	1.31
	3.49	1.29
	3.38	1.29
	3.06	1.24
	2.77	1.23
	2.60	1.23
	2.59	1.21
	2.34	1.19
	2.27	1.17
	2.17	1.17
	2.03	1.16
	2.01	1.15
	1.92	1.13
	1.88	1.10
	1.88	1.00
	1.84	.99
	1.80	.91
	1.63	.85
	1.60	.84
	1.60	.71
	1.54	
		Low:

Mean = \$2.50
Median = 1.54
National ratio = 2.28

¹Preliminary VEDS data, FY 79.

Examination of the table reveals that the nonfederal to federal matching ratio varies from a high of \$13.79 to a low of \$.71 with an average ratio of \$2.50. If the national aggregate values are used, the ratio is \$2.28. The median ratio, that is that ratio value which is exceeded by 50 percent of the states and territories, equals \$1.54. The fact that the mean exceeds the median implies a positive skewed distribution of ratios.

This is readily observed by noting that some few states have ratios that are widely discrepant from those of the majority of states.

The ratios presented in Table 1 are based on all funds reported out-laid in fiscal year 1979. Because of the Tydings Amendment, states have 27 months in which to expend funds allocated in a given fiscal year. Thus, the ratios represented in Table 1 are for fiscal year 1979 as well as all previous fiscal year funds carried over and expended in fiscal year 1979. Since states have the total 27-month period in which to achieve the set-aside requirements and since the ratios include funds from several fiscal years, no attempt should be made to infer the extent of compliance with the handicapped set-asides.

What the ratios do show, however, is the extent of the utilization of state and local funds to meet the added cost of providing handicapped services. An expenditure of \$2.28 state and local funds per federal dollar expended in FY 79 for programs serving handicapped students, in contrast with \$10.36 of state and local funds per federal dollar for all vocational education program services and activities indicates the relative importance placed on the provision of special services to handicapped individuals.

Impact of the Current Legislation--An Assessment

The current legislation is predicated upon a rational decision-making approach to the planning of vocational education programs, services and activities. The legislation is prescriptive in nature and stipulates a number of conditions that must be met in order to comply with its intent. The basic assumption is that quality can be legislatively mandated and that rational planning is the means to assure that state and local actions are in accord with federal intent. National priorities are prescribed with the expectations that federal dollars directed at these priority areas will shape the pattern of state and local expenditures.

These expectations have been largely unmet. National priorities have remained national priorities, with states in many instances unable or unwilling to redirect funding in accord with national priority areas. As evidenced by the results, federal priorities on serving handicapped students have been relatively unsuccessful in attracting state/local funds.

Numerous reasons can and have been offered. Many states pass the responsibility for matching to the local levels. Local agencies and institutions are experiencing a shortage of funds and are often unwilling to divert funds from regular programs to provide for matching of costs associated with provision of special services to handicapped persons. Because of the diversity of handicapping conditions and the uniqueness of the special services required to overcome these deficiencies, many LEAs are reluctant to make an investment in equipment and materials that may serve one or a limited number of students. Acceptance of federal support for programs serving handicapped students in vocational education, or any other federal vocational education support for that matter, obligates local recipients to compliance with federal reporting and spending constraints.

State allocations of federal dollars for provision of services to handicapped individuals are often at such miniscule levels that acceptance of the service obligations by eligible recipients is believed not to be commensurate with the benefits obtained. The maintenance of effort requirement locks the eligible recipients into a funding level that must be maintained on a continuing basis. Because provision of special services to handicapped students can be highly variable depending upon the prevalence and incidence of handicaps requiring special services, LEAs are often reluctant to commit their resources on a continuing basis. The requirement that all handicapped students have an individualized education plan absorbs extra re-

sources and increases the cost of serving handicapped persons. Handicapped students are also generally more difficult to place. Since vocational education programs are to be evaluated according to the number of program completers placed in occupations related to their field of training, vocational educators are understandably reluctant to devote their energies to the service of clients when the reward may not justify the cost.

The result is that SEAs and LEAs have not moved with dispatch to adopt federal priorities as their own. Whatever the reasons, the conclusion is obvious. By and large, the federal priority for serving handicapped students in vocational education has had but limited success in stimulating state and local interest.

What Could Be--Some Suggestions

It is useful to distinguish between vocational education and Vocational Education. According to Rupert Evans (1981), vocational education (lower case) is concerned with preparing people for work in a wide range of occupations needed by our society. Vocational Education (upper case) is what the federal legislation says vocational education should be doing. The necessity for both upper case and lower case vocational education is a central premise in the subsequent argument.

Vocational Education by definition should be concerned with the national priorities. These priorities should transcend state and local concerns and should be addressed to those issues of consequence to the nation as a whole. As addressed in the AVA's legislative directions for reauthorization of the Vocational Education Act, these priorities include:

- Human Development
- Productivity and Economic Revitalization

- Full Employment
- Economic Development of Depressed Communities
- Equality of Opportunity
- Energy Conservation and Generation
- The Maintenance of Defense Capabilities (AVA, 1980)

Provision of services to handicapped students presumably would be included under the priority to provide equality of opportunity to all who need and can profit from vocational education.

The role of federal support in vocational education has long been debated. The debate centers on whether federal funds should be used primarily for the support and continued maintenance of existing programs or whether federal funds should serve as a catalytic agent to promote new and/or improved programs. Under the assumption that Subpart II--Basic Grant funds have been used largely to support existing programs and that Subpart III--Program Improvement and Support Services funds have been used to support capacity building activities, the disparity of state/local to federal matching ratios (\$12.91 for Subpart II versus \$2.36 for Subpart III) provides hard evidence that states have not responded with the same intensity to program improvement and support priorities.

Given the argument that vocational education facilities and equipment, especially in urban areas, need to be refurbished and modernized, that instructional staff need to be retrained in order to teach changing technological skills, and that curriculum and instructional materials are needed to reflect changing occupational patterns and demands, there appears compelling evidence for a federal role as a capacity-building agent. By strengthening vocational education's capacity to respond to national priorities, the

2
federal government could complement and strengthen the state role to provide for the maintenance of ongoing programmatic efforts.

As with any partnership, a viable relationship between the federal and state levels requires that each receive a reciprocal return. If the states are to contribute to the achievement of national priorities, there must be an incentive to induce state cooperation. Rigid prescriptions on the use of funds must be replaced with greater discretion in the use of federal support. Those states that have achieved an acceptable level of services should have the privilege to utilize federal funds in those areas of greater need. If state and local funds are adequately serving the needs of handicapped students, then the states should not be required to expend a designated amount of federal funds simply to comply with mandated set-asides. If provisions of vocational services to special groups are judged to serve the national priorities, then federal funds should flow to these areas unfettered by matching and maintenance of effort requirements.

Suggested Actions

Consistent with the premise that the federal role should be to promote the achievement of national priorities and that states should be given greater incentive to cooperate in the achievement of these national priorities, the following suggestions are offered:

- o Reauthorization of the Vocational Education Act should provide for a categorical authorization for special support services to disadvantaged and handicapped students in vocational education.

A categorical funding authorization would remove the necessity for special set-asides for handicapped and disadvantaged students. Creation of a special categorical grant would signal that provision of services to handi-

capped and disadvantaged students is a national priority. States could be encouraged to use federal funds to build their capacity to serve these special populations.

- Federal funds for use in serving handicapped and disadvantaged populations should be allocated to the states on a formula that takes into account persons served rather than population size.

It is proposed that state allotments for disadvantaged and handicapped categorical funding could be made according to the relative numbers of handicapped and disadvantaged persons who are receiving special vocational education programs/services. Allocation on numbers served rewards performance. Simply put, those states who serve more would get more. The relative proportion of the handicapped funds allotted to each state could bear the same ratio to the total amount of handicapped funds available as the ratio of the handicapped persons served by that state to the total number of handicapped persons served nationally. A similar ratio could be computed for disadvantaged students. The handicapped ratio and the disadvantaged ratio applied respectively to the total amount of funds available for allocation to programs serving handicapped and disadvantaged students when added together would constitute each state's categorical allotment.

- States should have discretion as to how they wish to spend their categorical handicapped/disadvantaged allotment.

States would have complete freedom in the determination of the relative mix of funds allocated to programs for disadvantaged and handicapped populations. Those states desiring to put more state and local dollars in service

to handicapped students with relatively less federal dollars would have that freedom of choice. By so doing, states would be provided greater discretion in directing the flow of federal dollars.

- The maintenance of effort requirements should be abolished.

States should be given the freedom to redirect and readjust the funding levels as is necessary. Existing maintenance of effort requirements reduce the incentive of states to invest in special services for handicapped students for fear that once the dollars are committed they must continue that level of funding regardless of the intensity of need. Removal of this requirement also recognizes that services for handicapped students might be provided in a more efficient manner, thereby allowing the same services to be provided at reduced cost. Under the maintenance of effort clause, there would be no incentive to increase the cost efficiencies of existing services.

- There should be two pools of available categorical funds for serving special needs students. One pool should require no state/local matching, the other pool should provide for progressively greater federal matching depending on the magnitude of state effort.

Provision for 100 percent of the cost of handicapped/disadvantaged programs to be paid for with federal funds would provide an inducement to the states to address that priority area. By virtue of the allocation formula, those states who were serving a greater number of handicapped and disadvantaged students would receive a greater share of federal funds as a reward. In order to attract state and local funds to the priority area, a portion of the federal appropriation for the handicapped-disadvantaged category would be reserved for entitlement funding. States would be en-

titled to a specific allotment, provided that they were willing to match that allotment according to a designated matching proportion. The matching proportion should be a variable rate and should depend upon the ratio of the national to state expenditure per handicapped student. Those states having a higher per handicapped student expenditure in comparison with the national average should be rewarded with a higher federal to state dollar match ratio. That is to say, those states that are expending more for handicapped students should receive more federal dollars per state dollar expended than those states spending relatively less per handicapped student served. The logic for this becomes clear if one considers expenditures per handicapped student as a rough indication of cost. Those states with a higher per handicapped student expenditure would receive a greater number of federal dollars per state matching dollar in recognition of greater program cost.

- The federal government should rely on marketplace accountability rather than legislatively imposed prescriptions to ensure program quality.

Marketplace accountability recognizes that the final test of utility of vocational education is the extent to which it assists people in working more effectively. The judgment will ultimately be made not by federal and state administrators nor educational professionals, but by the people themselves. Through free choice, those programs that are meeting the needs will be supported and those programs not meeting the needs rejected. However, exercise of free choice requires adequate information on which to base that choice. Therefore, vocational education data should be collected and made available to the public as a means of making an informed decision. By publicizing vocational education programmatic data, the opportunities for

handicapped individuals to become involved in the social and economic life of our nation will be ultimately enhanced.

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The Abt Study of State and Local Compliance and Evaluation Practices: Special Needs Populations

by

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The Vocational Education Act (VEA), as amended in 1976, includes a variety of provisions intended to promote equity in vocational education for several target populations. The emphasis on special populations began with a broad mandate in the 1963 Vocational Education Act (VEA) that vocational education respond to the special needs of students who have academic, economic, or other handicaps which prevent them from succeeding in regular programs of vocational education.

In 1968, Congress concluded that the mandate, which simply emphasized that special services were needed for these groups, was not having the anticipated impact. Congress therefore amended the law to ensure that money was made available to remedy these concerns. Thus, the 1968 Amendments specified that a certain proportion of each state's VEA grant be set aside to serve each target group, and authorized special programs for the disadvantaged under a separate subpart.

Despite this added specificity, Congress remained dissatisfied with the size of expenditures for special needs populations, especially in regard to

This paper was originally presented at the annual meeting of the American Educational Research Association, Los Angeles, April 14, 1981. The views presented in the paper are the author's alone and do not necessarily represent those of the National Institute of Education, Abt Associates or other official policy.

state and local contributions which, in many states, were often negligible. The 1976 Amendments therefore retained the 10 percent set-aside for handicapped students and the separate subpart for special programs for the disadvantaged. They also increased the set-aside for disadvantaged students from 15 to 20 percent, in addition to computing these percentages on the total state grant, rather than simply a portion of it. The Amendments further specified that a portion of the disadvantaged set-aside be reserved for limited English-proficient students in proportion to their incidence in a state's population aged fifteen to twenty-four.

Regulations issued to implement the 1976 Amendments further emphasized the government's desire to increase state and local support for handicapped and disadvantaged students, ensured that federal dollars supplemented rather than supplanted state and local dollars, and specified that federal set-aside funds be applied toward the excess costs incurred by providing additional services to handicapped and disadvantaged students.

The purpose of this policy paper is to report the major findings of the Abt Study regarding the impact of the 1976 Amendments on services to special needs populations. Specifically, this paper will discuss findings regarding patterns of expenditures of VEA set-asides for special populations and a number of service delivery issues.

Patterns of Expenditures

Clearly, the primary mechanism for giving priority to special needs populations in the 1976 Amendments is the targeting of funds through the handicapped and disadvantaged set-asides under Subparts 2 and 3, and the special programs for the disadvantaged under Subpart 4. In the course of this investigation, it was found that states are making considerable pro-

gress in serving the needs of handicapped, disadvantaged and limited English-proficient populations. There remains room for improvement. This section will address some of these issues.

Distribution of Set-Aside and Subpart 4 Funds

Not surprising was the finding that the bulk of the set-asides and Subpart 4 monies in the sample states was distributed to local public educational institutions. In some states, however, all or some of the set-asides were used for statewide projects. Two states in the sample, for example, fund special needs consultants or itinerant teachers to provide technical assistance to local educators in working with the special needs populations. Other states fund research and dissemination projects through universities.

Many states also use the set-asides to fund programs in special schools. Eleven of the fifteen sample states, for example, used a portion of their handicapped set-aside to fund various state and private institutions for the provision of vocational services to blind, deaf, mentally retarded and other handicapped students. In two states a majority of the funds went to support these programs. Nine of our sample states used a portion of their disadvantaged set-aside to provide grants for vocational advocates in correctional institutions and sheltered environments. One sample state used its Subpart 4 funds for vocational training in correctional institutions.

Targeting of Funds

The data indicated that despite the high degree of variation in use of set-aside monies, many states tended to use their set-asides predominantly at one level of education. As shown in Table 1, four of the six states for which data were available spent more than 85 percent of the handicapped set-aside monies at one level. An equal number of states spent at least 75

Table 1

Percent of Handicapped and Disadvantaged Funds by Level of Education
from VEA Funds - Set-asides and Subpart 4*

	Handicapped Set-Aside		Disadvantaged Set-Aside		Subpart 4 Special Disadvantaged	
	Secondary	Postsecondary	Secondary	Postsecondary	Secondary	Postsecondary
Alabama			100	0	100	0
California					50	50
Colorado					69	31
Florida	87	13	64	36	40	60
Indiana					100	0
Kentucky					21	79
New Hampshire	100	0	100	0	52	48
New Mexico	0	100	0	100	0	100
Oregon	43	57	38	62	58	42
Pennsylvania	64	36	68	32	100	0
Wisconsin	10	90	21	79	49	51

*Empty cells indicate that data were not available for that breakdown; sample states with data for none of these breakdowns are not included.

Source: 1978 Accountability Reports.

percent of the disadvantaged set-aside monies at one level. Those states favoring secondary or postsecondary institutions with higher levels of funding in one category (e.g., the handicapped set-aside) were consistent in favoring them with higher levels of funding from other categories as well. Across states, however, there was no consistent pattern of expenditures at levels dominating secondary over postsecondary levels, or vice versa.

Site visits suggest two reasons for these spending patterns. One is that the funds were targeted to reflect the state administrative agency's primary orientation to one level of education over another. A second reason for targeting is administrative ease. Apparently, audit trails for excess costs and matching requirements are more easily accommodated within the delivery and accounting systems of one level rather than another in some states.

Given that the Act requires targeting of funds to both needy students and needy institutions, analyses of available data were performed to determine the degree to which federal handicapped and disadvantaged funds were targeted to local agencies. Table 2 presents these data.

In most sample states, Subpart 4 funds went to a relatively small number of institutions and evidenced considerable targeting. The percentage of eligible institutions receiving Subpart 4 funds ranged from less than 1 percent to 23 percent. There was generally less targeting of set-aside funds to eligible institutions, with several sample states distributing funds to a majority of local agencies. For these funds the range was 11 percent to 100 percent of eligible institutions receiving federal funding.

Although the Act does not require targeting of funds at a specific per-pupil expenditure level, this seemed to be an important question to try

Table 2

Percent of Local Eligible Recipients Receiving Funding for the Handicapped and Disadvantaged from VEA Funds — Set-asides and Subpart 4*

	Handicapped Set-Aside			Disadvantaged Set-Aside			Subpart 4: Special Disadvantaged			OER Funded
	Secondary	Adult and Postsecondary	Total	Secondary	Adult and Postsecondary	Total	Secondary	Adult and Postsecondary	Total	
California	78	100	81	59	100	65	20	41	23	
Colorado							4	13	6	Yes
Florida	49	29	39	73	60	66	22	21	21	Yes
Illinois							7	23	9	Yes
Indiana			20			26			4	Yes
Kentucky									6	Yes
New Hampshire	74	0	60	81	14	63	7	0	6	Yes
New Mexico	0	25		0	25		7	13		Yes
New York							3	0	2	
Oklahoma										
Oregon	18	85	22	20	92	25				
Pennsylvania	12	11	12	22	32	22	3		3	Yes
Texas							1	9	01	Yes
Wisconsin		100			100			100		Yes

* Empty cells indicate that data were not available for that breakdown; sample states with data for none of these breakdowns are not included.

Table 3

Mean Project Allocation to Local Institutions and Per-Pupil Cost
from VEA Funds: Set-Asides and Subpart 4*

	Handicapped Set-aside		Disadvantaged Set-aside		Subpart 4: Special Disadvantaged	
	Mean Allocation	Mean Per-pupil Cost	Mean Allocation	Mean Per-pupil Cost	Mean Allocation	Mean Per-pupil Cost
California	11,519	191	28,409	49	29,065	173
Colorado					29,978	797
Florida	30,293	112	34,088	52		
Illinois					15,811	365
Indiana	10,770	260	21,782	132	36,782	282
Kentucky					9,450	145
New Hampshire	6,586	99	7,938	65	9,237	204
New Mexico	33,136	612	104,710	120	36,625	506
New York	239,586		589,222	52	408,242	191
Oregon	10,024	199	19,450	67		
Texas					33,013	50

*Empty cells indicate that data were not available for that breakdown; sample states with data for none of these breakdowns are not included.

Source: 1978 Accountability Reports.

to answer, given the assumption that low levels of funding might probably result in limited impact. Table 3 presents data which show the pattern of higher average grants and average per-pupil expenditures for Subpart 4 than for the set-asides. This finding is consistent with requirements for greater targeting of funds under Subpart 4 and might be expected given that Subpart 4 monies can be used to fund 100 percent of the program costs.

While the above noted trends and comparisons among categories of funding is interesting, large variation among states in average per-pupil allocations within categories was also observed. Expenditures under the handicapped set-aside, for example, ranged from \$99 to \$612 per pupil. Such variation in expenditures suggests that funds earmarked for special needs populations were being used to support widely differing levels and/or types of services. Interviews with state and local administrators confirmed this conclusion.

State and Local Matching Funds Increased

A major congressional concern in drafting the 1976 Amendments was the low, and in some cases declining, rate at which the federal set-aside funds were matched by state and local dollars in FY 1973. An analysis of Bureau of Occupational and Adult Education (BOAE) data for FY 1978 revealed that the set-asides were still matched at a rate considerably lower than that for the VEA grant overall. However, matching ratios for the set-asides did appear to be improving. Nationwide, state and local monies

¹The GAO report indicated that in 1973 states were matching federal funds for handicapped students at the rates of \$1.10 to \$1.00, disadvantaged students at the rates of \$2.19 to \$1.00, compared to an overall state to federal match of \$5.93 to \$1.00. In 1978 these ratios were \$4.07 to \$1.00, \$5.34 to \$1.00, and \$12.27 to \$1.00, respectively.

matching the federal set-asides were considerably higher in FY 1978 than in FY 1973.¹ Also, state and local vocational administrators interviewed indicated that the expenditures they reported to BOAE to satisfy the federal matching requirements by no means reflected all of the state and local spending for handicapped and disadvantaged students in vocational education.

Return of Federal Set-Asides

As early as 1979, it became clear that states were experiencing difficulty complying with the law and regulations and that portions of the federal set-aside would be returned to the Treasury. Congress took steps at that time to ameliorate the situation by permitting BOAE to approve waivers of matching provisions. The FY 1978 expenditure data showed that, in fact, no state in our sample spent all of its set-aside monies during that fiscal year. However, in roughly half of the states, the carryover for the set-asides was no greater than the carryover for the VEA grant overall. This suggests that, in these states, the proportion of funds not spent reflected general administrative practices rather than problems unique to serving handicapped and disadvantaged students. In the remaining states, however, the carryover for the set-asides was larger than that for the total VEA grant, indicating that there may be special difficulties in these states. Whether the difficulty was short term or more permanent in nature remains to be seen. Judging from interview data, however, major problems appeared to be the result of rapid fiscal shifts and will resolve themselves over time.

Concerns of State and Local Administrators

The major concerns voiced by vocational educators in relation to the set-asides are concerned with the excess cost and matching requirements. Administrators in most sample states reported difficulties in documenting excess costs expenditures and in generating the state or local match for those costs. For many administrators, these two requirements posed the largest problems with the 1976 Amendments. This finding was consistent even in some of the states which spent a relatively high proportion of their set-aside funds.

A number of schools in some states simply did not claim reimbursement under the set-asides because local administrators feared having costs disallowed in an audit and believed that the cost of documenting expenditures would exceed the federal funding they might have received. Other districts took advantage of the set-asides, but for very safe and often uncreative purposes. Most states appear to be increasing their efforts to resolve these problems. Not only are they increasing the pressure on local districts to spend these monies, but they are providing technical assistance to local districts in defining and documenting costs and in identifying state programs that might be used as a match.

Some states in our sample were more "creative" in generating a state match without over-burdening local school districts. For example, several states gave part of their set-aside allocation to special state-supported schools for deaf, blind, or mentally retarded individuals. These states also funded vocational programs for inmates in state prisons. It was easy, in this situation, to generate a very large over-match with a small amount of federal VEA funds. In fact, one state was able to generate almost all of its required state and local match by allocating funds for a state-supported inmate training program.

A final concern among state administrators focused on the requirement that federal handicapped and disadvantaged funds be distributed among eligible recipients by formula.² This procedure, they argued, typically resulted in one of two scenarios: (1) allocations too small to be of use to local districts, or (2) the distribution of funds to local agencies not wanting them and therefore returning them unspent. However, an analysis of various distribution procedures, e.g., formula vs. projects, indicated that distributing monies by formula rather than by a project method was not consistently associated with a lower spending level for set-asides or Subpart 4 funds.

Service Delivery Issues

In addition to setting aside vocational education funds for special needs populations, the 1976 Education Amendments contain several provisions which address the actual delivery of services to special populations. Among these are:

- legislatively imposed definitions of handicapped, disadvantaged, and limited English-speaking students;
- requirements for coordination between special education and vocational education; and,
- provisions that special needs students be served wherever possible in regular vocational education programs.

By including these provisions, Congress expressed its concern over both the amount of funds flowing to special programs and the nature of services being provided to special groups.

²While this has never been a "requirement" in the sense of being an official regulation or legislative provision, it has been the position of BOAE to encourage states to distribute all funds to local education agencies by the formula method. Indeed, many states believe they must do so.

States Becoming More Systematic

In terms of delivering services to handicapped and disadvantaged students in vocational education, there were some indications in the sample states that local education agencies, particularly at the secondary level, were becoming more systematic in the definition, identification, and assessment of needs. The 1976 Amendments, in conjunction with the Education for All Handicapped Children Act (P.L. 94-142), appear to be having a major impact on the way both physically and mentally handicapped students are being served. In many schools the IEP process became the basis for identifying and addressing the needs of these students.

As might be expected, at the postsecondary level Section 504 of the Rehabilitation Act of 1973 seems to be a more salient force in directing local activities regarding handicapped individuals. These activities tended to focus on modifying facilities to provide access for physically handicapped students. To the extent that postsecondary institutions served handicapped students, with other than physical handicaps, their identification and the assessment of needs appeared to be less systematic than at the secondary level. This difference may be due entirely to the differential impact of P.L. 94-142.

The procedures for identifying disadvantaged students and assessing their needs at both the secondary and postsecondary levels were more variable than those for secondary handicapped students. Some districts identified disadvantaged students through standardized achievement or diagnostic tests given regularly to all students; other districts relied on referrals from individual teachers of students who needed additional assistance. Most states sampled emphasized the academic definition to the exclusion of the economic definition of disadvantage.

Some Progress Despite Problems

Despite the apparent progress in defining, identifying and assessing the needs of special populations in vocational education, problems remain. The needs of limited English-proficient students apparently were not being systematically assessed in all sample states. Some state agencies were conducting needs assessments and beginning to plan for this group, but few programs were operational. Other states appeared to be doing virtually nothing for these students.

Problems also existed in serving handicapped students. In many districts, the role of vocational educators in the IEP process was not clear. Problems were also evident in the communication of information regarding special students from "home" schools to area vocational schools. A number of state agencies in our sample had begun to address these problems by working with the division of special education, and in some cases the division of vocational rehabilitation, to issue policies clarifying the roles and responsibilities of the different groups working with handicapped students.

State and local vocational administrators sampled reported three areas of progress in increasing the proportion of special needs students served in regular vocational programs rather than in separate classes. First, state administrators commented that local education agencies were using fewer VEA dollars than before to sponsor separate "pull-out" programs. However, no independent evidence exists (e.g., analyses of enrollments or types of programs funded by VEA) to either verify or counter these reports. Second, no mention was made of states or local districts avoiding mainstreaming because separate programs may be reimbursed at a higher rate--up to one-half the full cost of programs, rather than one-half the cost of only the additional services provided in a regular program. In fact, re-

spondents insisted that separate vocational programs were used only for severely handicapped students. Finally, interviews indicated that disadvantaged and physically handicapped students are more apt to be mainstreamed than mentally handicapped students. A common approach to serving mentally handicapped students who had received their academic instruction in separate classes was to begin their vocational education in a transitional class. These students initially took an exploratory vocational course in a class with only other handicapped students. Then, if students did well in one occupational area, they were transferred to a regular class in that program. However, some less able students remained in a separate program for the duration of their education.

State Agency Activities

At the state level, many sample state agencies engaged in a variety of activities to support special needs populations. All sample states had at least one staff member whose major responsibility included overseeing programs for one or more special needs populations. In roughly half the states, the duties of these staff members appeared to be primarily oriented towards administering VEA funds. In the other half, however, the staff placed greater emphasis on program issues. These included, for example, coordinating training and materials development, providing technical assistance, and working with other state agencies to issue policies and sponsor programs for special populations. The staff in this second group appeared to more actively promote the interests of the special needs students than did the staff in the first group, and their efforts seemed to be an important source of support in meeting the needs of special populations.

Two approaches to providing training and technical assistance to local districts were taken by state agencies. Services were usually provided

either through colleges and universities, or directly by state staff and state-hired consultants. College-based training consisted of extended courses, while assistance provided by state staff was more frequently short-term workshops, conferences, professional meetings, or on-site visits to individual schools. Through these forums, the state offered awareness training, disseminated policies and curriculum materials, assisted districts in administering VEA funds and, in some cases, conducted on-site program reviews.

Coordination with other state agencies dealing with special needs populations was a frequent state activity, as well. These efforts of state staff focused most frequently on programs for handicapped students. Examples of joint activities with special education and vocational rehabilitation included both formal, written interagency agreements which clearly defined roles and responsibilities, and more informal working relationships.

Recommendations

The handicapped and disadvantaged set-asides and the Subpart 4 funds were clearly meeting the original intent of targeting VEA funds to special populations, and should be retained. Several state administrators reported that without the mandated set-asides they would probably continue to serve handicapped and disadvantaged students, but not at the high level that the current legislation requires.

The impact of the excess cost and matching requirements which accompany the set-asides was less clear. From this study, it was not possible to determine the extent to which difficulties cited by administrators were inherent in federal requirements, and therefore lasting, or were simply functions of inexperience in dealing with these concepts. The latter appeared to be the case, but only further study will answer the question

for sure. It is recommended here that the excess cost and matching requirements be retained, but this recommendation must be qualified by the assumption that the difficulties which states encounter with the excess cost and matching requirements will diminish over time.

Along the same lines, it is recommended that Congress revise the present excess cost policy allowing districts to apply federal reimbursement to the full costs of separate programs for handicapped students, while only applying federal funds to the excess costs of mainstreamed programs. While no one indicated that this policy was a barrier to mainstreaming, it appeared to be in conflict with the purposes of P.L. 94-142. Congress might alter present policy, for example, by supporting separate programs only for the costs above the district-wide per-pupil costs of providing vocational education to non-handicapped and non-disadvantaged students.

Finally, given limited staffing, OVAE should be encouraged to give priority to providing states increased technical assistance on excess cost and matching of federal funds. It was apparent that administrators in states were unclear about legislative intent and had received little guidance on the matter. OVAE should also be encouraged to monitor the effectiveness of the revised matching requirements to determine whether its procedures for seeking a waiver are so restrictive that states do not take advantage of the new requirements.

Since many policy questions will be unanswered by this study, Congress should monitor the set-aside expenditures to determine whether states are indeed mastering the excess cost and matching requirements, or whether those requirements serve as disincentives to the use of federal funds.

Only minor changes are recommended in the service delivery provisions. With regard to handicapped students in vocational education, the

reliance on the P.L. 94-142 process is useful and appropriate. There seems to be little justification for creating a new assessment and identification process just for vocational education. There is, however, a need to clarify the involvement of vocational education in the special education needs assessment and planning process. The present process simply does not include persons knowledgeable about skill requirements for vocational programs. Congress should consider adding language to either the Vocational Education Act or to the Handicapped Act to ensure the involvement of vocational educators in the development of IEPs for handicapped students placed in vocational education programs.

Since there exists no standard procedure for identifying and assessing the needs of disadvantaged students, local education agencies should be encouraged to develop systematic procedures. To support the emphasis on developing systematic local processes local education agencies should be required to describe their approach to identifying and serving these students in their local application or plan for federal funding.

If Congress wishes to continue its emphasis on limited English-speaking students in vocational education, additional technical assistance should be provided to states in developing strategies for identifying and serving this population. Present efforts appear sporadic and lacking in both identification procedures and assessment of needs.

In terms of state activities for special needs populations, it is recommended that each state be required to develop a plan detailing those activities state staff will provide in the areas of training and technical assistance, coordination with other state agencies, and monitoring local activities. Such a plan would be comparable to the one currently required for sex equity and is consistent with the earlier recommendation of redefining

the state plan as a master plan of state agency activities. This recommendation is based on the premise that state staff perform critical functions in delivering services to special needs populations.

In summary, current provisions of the law appear to be working relatively well. No major changes are recommended at this time since states seem to be successfully coping with the new provisions. Congressional attention should be focused on fine-tuning the legislation in a few areas including federal and state administrative roles, potential or actual conflicts with federal mainstreaming policy and improvement of procedures for identifying and serving handicapped, disadvantaged and limited English-speaking populations.

Reauthorization of the Federal Vocational Education Act: Possible Directions

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The Vocational Education Act, which last underwent extensive amendments in 1976, expired September 30, 1981. Although the Congress enacted a one year extension of the 1976 legislation to give the new administration time to formulate its own policy on vocational education, it is continuing to deliberate reauthorization. This paper proposes some major legislative changes that would not only clarify and simplify the present law, but would also make federal spending for vocational education more effective. It argues that while the federal government should adopt a more limited number of more clearly specified objectives--and hold state and local government more accountable for addressing those aims--state and local governments should be given free reign to meet these objectives in whatever fashion is locally appropriate. In a sentence, it calls for centralization of purpose and decentralization of process in delivering vocational education.

The paper proposes that federal spending for vocational education serves four general purposes (1) equalization of resources for general programs, (2) program improvement in specially designated urban and

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rural areas, (3) expansion of cooperative, apprenticeship, and other programs that offer work experience related to classroom instruction, and (4) achievement of balanced enrollments throughout the vocational education curriculum in terms of race, sex, handicap, disadvantage, and limited-English proficiency. Existing set-asides and other restrictions on expenditures of funds are eliminated. In their stead are requirements that recipients of federal funds demonstrate progress toward achieving balanced program enrollments. As long as recipients demonstrate such progress on objective measures specified in the legislation and regulations, they are free to spend federal and state matching funds as they see fit, subject to accepted standards for auditing. Federal dollars, along with state matching funds, are allocated by a weighted pupil formula with factors and weights clearly specified in the legislation. Finally, planning and reporting requirements are substantially reduced.

Coordination With Other Federal Legislation

A major concern of federal policy regarding vocational education has been improving access to high quality programs among all persons, and especially among minorities, women, and handicapped and disadvantaged persons. While many aspects of current vocational education legislation attempt to address this problem, many of the major obstacles to high quality programs lie outside the vocational education establishment. Among the major barriers are (1) inadequate basic skills, (2) geographic immobility, (3) insufficient financial ability, (4) restricted program enrollments, and (5) restricted job entry. None of these impediments can be adequately handled by vocational education alone. Even the problem of restricted enrollments exists in part because of accurate assessments of basic skills

necessary to enter the program and employment prospects upon completion. Consequently, improving access through vocational education legislation will require better coordination with other aspects of federal policy concerned with basic skills education, transportation and school construction, financial support for students, expansion of training and improved employment opportunities. To date, such coordination leaves much to be desired. Some examples will illustrate the problem.

It is a common mistake to speak of vocational education as though it were a single program, a unified curriculum with rather uniform standards of entry, instruction, completion, and job placement. In fact, vocational education is extraordinarily diverse. It represents approximately 200 different programs, including topics as dissimilar as ornamental horticulture, general merchandising, inhalation therapy, home management, shipping and receiving, petroleum technology, and aviation airframe and power plant maintenance, to name but a few. Each program may be comprised of as many as a dozen courses. Moreover, even within a single school district, programs may be offered in a variety of institutions--comprehensive high schools, community colleges, vocational high schools, "shared time" area schools, or vocational technical institutions.

With such diversity, it is inevitable that programs vary widely in quality. Quality is an elusive term in education, and we do not claim to have a comprehensive definition. Nevertheless, if one examines some simple measures such as intensity of instruction (i.e., contact hours, credits, etc.), expenditures per student, prospects for employment, placements, and expected earnings, it is clear that there is a hierarchy of vocational programs with some far superior to others. It is important to note that this hierarchy is not necessarily constant across a state or even across a local

school district. Thus, welding may be a better program than radiation therapy in a community with heavy new construction and a surfeit of health workers. Similarly, welding taught in a vocational high school and welding taught in a comprehensive high school may share nothing in common except the same six-digit OE program code. In short, one must be discriminant in labeling particular programs low or high quality, but there is little doubt that the distinctions exist and are widely understood by employers, teachers, students, and parents.

Given that such a hierarchy exists, how then do special populations fare? To answer that question, and at the risk of violating the caveat against generalizing about high quality programs, some general observations are offered about which vocational education programs are likely to be better than others. First, offerings in vocational high schools and shared-time area schools tend to be superior to those in comprehensive high schools. Compared to comprehensive high schools, these schools are able to realize scale economies that permit them to use equipment that is more up-to-date and to employ more experienced staff. Second, programs requiring a higher level of entry level skills tend to have higher rates of completion and more placements in higher paying positions. Many of these programs are technically oriented but also include more specialized trades that require long term commitments to training. Third, programs preparing students for jobs whose entry is closely controlled by unions, professional associations, or licensing agencies tend to be better than those leading to jobs where entry is unrestricted. Finally, programs that include work experience, such as cooperative or apprenticeship programs, are often superior to those that do not.

There are, of course, frequent exceptions to these generalizations but if one is willing to accept them as broadly descriptive of the program hierarchy, they pose some clear implications for the access of minorities, women, and handicapped and disadvantaged students. First, vocational high schools and area schools are often not conveniently located to permit easy access for students in minority neighborhoods or economically depressed areas. Moreover, even if transportation costs could be covered, trip lengths of an hour or more make such a solution impractical in many urban as well as rural areas. Consequently, in many areas, access can be improved only by constructing new facilities or renovating existing buildings. While Section 120 explicitly permits using the basic grant for construction, most states find it impractical to use the basic grant for this purpose. Moreover, Subpart 4 of Part B, which provides emergency assistance for remodeling and renovation of vocational education facilities has never been funded, although the 1976 Amendments authorized expenditures of \$250 million for FY 1978 through FY 1981. Consequently, substantial numbers of students in urban and rural areas remain geographically isolated from high quality vocational education.

Second, even where geographic isolation is not a major problem, many students are unable to enroll in programs offered at vocational high schools. In New York City, for example, the district estimates that about 15,000 students could not be given either their first, second, or third choice of the vocational high school they wanted to attend. In part, this is a problem of insufficient resources to expand these programs, but the impact of the problem is borne disproportionately by special populations. Because the programs are high quality and because they are oversubscribed, admission is competitive and depends largely on academic achieve-

ment and mastery of basic skills. Unfortunately, because the district does not have the resources to expand offerings of vocational high schools, there is no incentive, and indeed even a strong disincentive, to provide additional remedial instruction that would qualify a disadvantaged student for admission. Similarly, from the student's perspective, the large number of students rejected discourages all but the most determined student from seeking remedial instruction since even with improved academic performance, chances of admission are far from certain.

Admission criteria established for more technical programs produce similar problems for disadvantaged students at the postsecondary level. In this case, as much as a year's work of preparation in math or science may be necessary simply to be considered for admission into certain vocational education programs. For students with limited financial means to support themselves, lengthy preparation is difficult to pursue and carries with it a substantial risk of not being admitted to an oversubscribed program. Consequently, such considerations may effectively force these students to opt for lower quality programs that have no admission requirements, open enrollments, and prospects of lower paying employment.

Further compounding the difficulties faced by minorities, women, and disadvantaged and handicapped students are problems posed by restricted entry into the labor market. Substantial discrimination persists, and while some of this is probably malevolent, some also results from employers' perceptions that hiring minorities, women (in non-traditional occupations), and handicapped individuals carries higher risks. It matters not that these perceptions are unfounded, for as long as employers believe that hiring increases the chances of such problems as increased labor strife, higher insurance premiums, greater labor turnover, greater probabilities of law

suits and other legal problems, lower productivity, and the like, they will continue not to hire high risk employees, unless they are offered significant financial incentives that reduce the perceived risks. In short, lack of access to high quality vocational programs results in part from a vicious cycle that must be broken if gains are to be realized. Students perceive that restricted job opportunities greatly diminish the rewards of large investments of time and foregone earnings in academic preparation and vocational education that lead to high paying jobs. Employers see few minorities, women, or handicapped students coming through the higher quality programs and remain suspicious of hiring them. The result is a kind of self-reinforcing, structural discrimination.

This structural discrimination, as well as its more malicious counterpart, also limits opportunities in vocational education programs that offer work experience, especially cooperative and apprenticeship programs. Small programs to begin with, they comprise only about 2 percent of enrollments in vocational education--co-op and apprenticeship opportunities are even less available to students who are part of special populations. Job discrimination, however, is only one of several causes of limited participation. Most of the other factors already discussed also impede access to co-op and apprenticeship programs. Thus, in many instances, there are simply no job opportunities within traveling distance from the student's home or school. In other cases, co-op and apprenticeship programs carry higher entry requirements either to limit enrollments or to recognize real prerequisites necessary to perform on the job.

While vocational education must shoulder some of the responsibility for limited access, it is clear that many of the impediments are beyond the direct influence of vocational educators. Consequently, if federal legislation

is to improve the access of special populations, it must consider more closely how related federal policies impede or strengthen this objective.

Toward New Vocational Education Legislation

Seeking to address some of the major deficiencies of the present legislation, extensive revisions of the Vocational Education Act are now offered. Broadly outlined, legislation comprised of three parts is envisioned. Part I, controlling 50 percent of the federal funds for vocational education, would provide general program support and would distribute funds under a formula designed to level up the resources of the neediest eligible recipients. Part II, affecting 25 percent of federal VEA funds, would distribute federal funds directly to urban and rural areas to expand enrollments in vocational high schools or shared-time area vocational schools. Part III, distributing the remaining 25 percent of VEA funds, would be used to expand enrollments in cooperative, apprenticeship, and other programs offering work experience related to classroom instruction. Recipients of federal funds under any of the three parts would continue to be eligible for funds as long as they could demonstrate either that program enrollments are balanced in terms of race, sex, handicap, and disadvantage, or that they are making sufficient progress (as defined in the law) toward balancing enrollments.

An organizing premise for this reformulation of federal legislation holds that the federal government is too far removed from and too poorly informed on local conditions to be effectively prescriptive on questions of how to improve delivery of vocational education. What is needed in one community may be unnecessary in another. Consequently, the primary aim of federal legislation ought to be establishing a few clearly defined objectives for vocational education and holding states and LEAs accountable for realizing

those objectives if they are to continue receiving federal funds. As to how those aims are met, states and localities ought to be allowed to pursue whatever strategies seem locally appropriate. Under such an approach, federal oversight would concern itself mainly with what states and localities accomplished rather than with how they conform to excessively detailed requirements for planning and fund distribution. In short, reauthorization should seek to centralize national objectives while decentralizing the process for meeting them. In this section, the outlines of legislation that address this aim are suggested.

General Program Support

Under Part I of the proposed legislation, half of the federal funds would be available to be used by eligible recipients for whatever purposes they consider appropriate. States would be required to match federal funds dollar for dollar and both federal and state matching funds under this part would be distributed by the same formula. Consequently, each federal dollar distributed to eligible recipients would carry a state dollar with it.

The primary objectives of this part are twofold. First, it continues the aim of the present legislation to aid LEAs that are less able than others to provide the financial resources necessary to provide high quality vocational education in the areas they serve. Second, it seeks to improve the access of minorities, women, and handicapped and disadvantaged students to high quality vocational education. Meeting the first objective is the responsibility of the state. State administrators would continue to oversee the distribution of funds to eligible recipients, although by specifying the distribution formula in federal legislation, these responsibilities are considerably simplified. Meeting the second objective is largely the responsi-

bility of LEAs, and they are free to determine their own strategies for improving access and achieving balanced enrollments.

The objection will be raised that this approach is not sufficiently prescriptive, that many LEAs will fail to do the right thing by not providing adequate support services, in-service training, curriculum development, remedial instruction, or any other of countless activities. Many LEAs will fail to find the right combination and progress will be slower in some than in others. However, there is no single right approach that all LEAs can be required to follow. Neither are local conditions similar enough to make such a prescription effective, nor is enough known to say what the prescription should be. In any event, the bureaucracy responsible for administering the legislation has shown itself largely unable to administer the prescriptive aspects of existing legislation, and it is doubtful that its performance will improve by giving it even more to do.

The details of the distribution procedures are as follows. Generally, a system that allocates funds on the basis of fiscal capacity per unit of weighted full-time equivalent enrollment (WFTE) is envisioned. The legislation specifies what categories of students (e.g., handicapped, disadvantaged, etc.) are to be weighted. It does not specify the weights precisely but offers states a range from which to choose. For example, a handicapped FTE may be assigned a weight ranging from 1.4 to 2.0. Additionally, states have the option of weighting enrollments by program costs where sufficient data are available to make these additional calculations.

The fiscal capacity of eligible recipients is determined in one of two ways. In the case where resources are provided entirely by the state--as is the case for many postsecondary programs--an eligible recipient's fiscal capacity is simply state revenues for vocational education. In the case

where both state and local revenues contribute to vocational education, fiscal capacity is determined by levying a computational tax rate against the local tax base (calculated in terms of property values and personal income) and adding the result to state revenues for vocational education. Eligible recipients are then ranked by fiscal capacity per WFTF, and federal and state matching funds are distributed in such a fashion that the lowest is first raised to the level of the second lowest, these two are then raised to the level of the third, and so on until funds are exhausted. Consequently, in states where there are vast differences in fiscal capacity per WFTF, federal and state matching funds under Part I would be concentrated among the very poorest. In states where these differences are less pronounced, funds would be distributed more widely.

Assistance to Large Cities and Rural Areas

Twenty-five percent of federal VEA funds would be distributed under Part II to provide assistance to large cities and rural areas. Half of the money under this part would go directly to cities with populations of 300,000 or more as of the United States Census of 1980. These funds would be distributed on a per capita basis, with equal amounts per capita going to all eligible cities. Because of the leveling up feature of Part I, no attempt is made to compensate for differences in fiscal capacity. Consequently, some cities may receive funds under both Parts I and II, while some may receive funds only under Part II. Funds would flow directly from Washington to the cities, bypassing the states which are not required to match under this part.

The primary objective of funds for cities under this part is expansion of programs in vocational high schools and shared-time area vocational

schools, or any other program that seeks to concentrate and specialize vocational activities at a particular school. To continue to be eligible for funds, a city must demonstrate either that enrollments in vocational high schools, shared-time area schools, and other specialized programs are balanced in terms of race, sex, handicap, and disadvantage or that adequate progress is being made toward such balance. Cities are free to choose any strategy for meeting these twin objectives of expanded programs and balanced enrollments. Thus, funds may be used for construction, equipment purchases, transportation, salary supplements, in-service training, counseling day care services, or any other purpose deemed appropriate. As a general rule, these funds would be used to expand programs in secondary institutions only. However, if secondary programs would best be served by making use of postsecondary facilities and staff, these funds could be expended at the postsecondary level.

The other half of the funds distributed under this part would be awarded on a competitive basis to rural areas for projects designed to expand and improve vocational education opportunities for students in rural areas. For purposes of this part, a rural district is one that contains no city with a 1980 population of 10,000 or more and is not part of a Standard Metropolitan Statistical Area. Project approval would give priority to proposals for expanding programs in area schools or other shared-time activities that permit a wider variety of program offerings and specialization. However, eligible LEAs could propose alternative projects if they could demonstrate that expansion of programs in area schools or other shared-time activities was infeasible or inappropriate. Further, rural LEAs with secondary enrollments of fewer than 300 students would be required to join with other LEAs to reach a combined enrollment of 300 or more before applica-

tions would be considered. Projects could be funded for up to five years, subject to acceptable audits. Additionally, recipients must demonstrate balanced enrollments in vocational education programs or sufficient progress toward balance to continue eligibility for federal funds.

Expansion of Cooperative, Apprenticeship, and Other Work Experience

Under Part III, states would receive 25 percent of federal funds to distribute to secondary and postsecondary LEAs for expanding cooperative, apprenticeship, and other vocational education programs that offer work experience related to classroom instruction. States would be required to match federal funds dollar for dollar and to distribute funds to LEAs on the basis of equal federal and state dollars per WFTE enrollment in vocational education. Here again, because Part I seeks to compensate for fiscal capacity, Part III funds are not constrained by this consideration; however, funds are to be allocated on the basis of weighted FTE student as calculated for Part I, thus directing more funds per student to LEAs with greater numbers of students in special populations. To continue to be eligible for funds under this Part, LEAs must demonstrate balanced enrollments in cooperative, apprenticeship, and other work-experience programs or adequate progress toward balance.

Defining "Balanced Enrollments" and "Sufficient Progress" Toward Balance

One of the primary objectives underlying each of the three parts of this proposal is achieving balanced vocational education enrollments in terms of race, sex, handicap, and disadvantage. For purposes of this proposal, enrollments in the relevant programs are considered to be balanced if the proportions of minority, male and female, handicapped, and disadvantaged

students in these programs are equal to the respective proportions of these groups in the secondary or postsecondary enrollments of the LEA, plus or minus 20 percent of that proportion. Thus, if boys are 50 percent of total secondary enrollments (total enrollments, not only vocational education) in an LEA, a program will be considered sexually balanced if it contains from 40 to 60 percent boys ($.2 \times 50 = 10$; $50 \pm 10 = 40$ to 60). Similarly, if blacks are 30 percent of an LEA's secondary enrollment, a program will be considered racially balanced if blacks represent from 24 to 36 percent ($.2 \times 30 = 6$; $30 \pm 6 = 24$ to 36) of that program's enrollment.

Standards of balance would apply to program enrollments at the level of four-digit OE Codes. Because programs at the six-digit level are frequently quite small (often containing fewer than twenty students), quantitative standards are impractical. Balance at the level of two-digit OE Code, however, is too general to be meaningful. For purpose of this legislation, there are seven categories of special populations (four racial groupings--American Indian/Alaskan Native, Asian American/Pacific Islander, Black Not Hispanic, and Hispanic--males and females, handicapped, and disadvantaged). Local Education Agencies would be expected to achieve balance of the level of four-digit OE Codes for any group exceeding 5 percent of the LEA's total enrollments. This 5 percent rule is adopted because below that proportion, the absolute number of students is likely to be too small to make quantitative standards practical at the four-digit program level. Nevertheless, LEAs would still be expected to achieve balance within the overall vocational education program for groups representing less than 5 percent of total enrollments. Thus, in an LEA where males are 55 percent of total enrollments, Hispanics are 15 percent, Asians 4 percent, blacks 3 percent, handicapped 9 percent and disadvantaged students 7 percent, over

all vocational programs, Asians must be from 3.2 to 4.8 percent of enrollments and blacks from 2.4 to 3.6 percent.

For programs out of balance, sufficient progress toward balance is defined as an annual increase in enrollment of 15 percent of the difference between the districtwide average proportion of the special population and the proportion enrolled in the program. For example, if Hispanics are 20 percent of district enrollments but only 10 percent of enrollments in Aviation Occupation (OE Code 17.04), then sufficient progress toward balance would be an increase of 1.5 percent the first year ($.15 \times (20 - 10) = .15 \times 10 = 1.5$ percent), an additional 1.3 percent the second year ($.15 \times (20 - 11.5) = .15 \times 8.5 = 1.3$ percent), 1.1 percent the third year ($.15 \times (20 - 12.8) = .15 \times 7.2 = 1.1$ percent), .9 percent the fourth year ($.15 \times (20 - 13.9) = .15 \times 6.1 = .9$ percent), and so on until balance is achieved. In this example, balance is achieved when Hispanic enrollments exceed 16 percent ($20 \pm .2(20) = 20 \pm 4 = 16$ to 24 percent), which would occur in the sixth year for this particular program if enrollment goals were met. An LEA that exceeded its enrollment goal in one year could apply the excess toward the following years. Finally, recognizing that it is unwise to penalize severely LEAs that are making substantial progress toward meeting these objectives, and LEA would continue to be eligible for federal funds if it could demonstrate that at least 90 percent of students enrolled in vocational education programs were enrolled in programs that either were in balance or had made the required progress toward balance.

Distribution Procedures

Funds allocated for general program support under Part I would be distributed under a distribution formula specified in the federal legislation.

The distribution procedures consist of three basic steps: (1) weighting enrollments, (2) determining fiscal capacity, and (3) leveling up resources based on fiscal capacity per unit of weighted enrollment. Each of these steps will be explained.

Weighting Enrollments in Vocational Education

The first step in the distribution process requires weighting the vocational education enrollment of each eligible recipient to reflect the needs of special populations. At a minimum, each state would be required to calculate enrollments weighted for the numbers of handicapped, disadvantaged, and limited English proficient students. Additionally, states would have options of making finer distinctions among handicapped students, establishing an incentive system for achieving balanced enrollments, and weighting for differences in cost per student among different types of programs at the two, four, or six-digit program level.

Required Weighting. For each eligible recipient, the state would determine weighted enrollment using the following general formula³:

$$WE = VE + aHE + bDE + cLEP \quad (1)$$

where WE = weighted vocational education enrollment

VE = the recipient's total enrollment (unduplicated or FTE) in vocational education

HE = number of handicapped students enrolled in vocational education

DE = number of disadvantaged students enrolled in vocational education

³Where available, FTE should be used throughout.

LEP = number of students with limited English proficiency enrolled in vocational education.

The coefficients a, b, and c are the weights given to each population and must lie within the following ranges:

a (handicapped) = .4 to 1.0

b (disadvantaged) = .3 to .7

c (limited English) = .15 to .3

Duplicate counting is required such that a student who is handicapped and disadvantaged would be counted first as part of VE, second as part of HE, and third as part of DE. Ideally, enrollments would be expressed in terms of full-time equivalents (FTE) or average daily membership (ADM), but where states lack such data, simple enrollments could be employed.

To illustrate how the formula would work, consider the following hypothetical example in a state choosing the maximum weights in all three categories. An eligible recipient has 450 students enrolled in vocational education. Of these, fifty-three are handicapped, ninety-four are academically or economically disadvantaged, and twenty-two have limited-English proficiency.

The total weighted enrollment for this district is therefore:

$$WE = 450 + 1.0(53) + .7(94) + .3(22) \quad (2)$$

$$WE = 450 + 53 + 65.8 + 6.6$$

$$WE = 575.4$$

Option One: Distinguishing Among
Different Types of Handicapped and
Disadvantaged Students.

A state wishing to make finer distinctions among different types of students with special needs could adopt a variation of the formula for weighting enrollments. For example, suppose a state wanted to establish different weights for five classifications of handicapped students and two classifications of disadvantaged. It could vary the basic formula as follows:

$$WE = VE + a_1HE_1 + a_2HE_2 + a_3HE_3 + a_4HE_4 + a_5HE_5 + b_1DE_1 + b_2DE_2 + cLEP \quad (3)$$

where $HE_1, HE_2, \dots$ are enrollments of students with particular handicaps and $a_1, a_2, \dots$ are different weights (within the specified range of .4 to 1.0) applied to each group. As long as a state kept weights within the required ranges, it would be free to establish as many subcategories as it wished. Students with multiple handicaps could be counted more than once or assigned to the category carrying the highest weight. Similarly, a student who was both academically and economically disadvantaged could be counted twice or assigned to the classification with the greatest weight. Students who are both handicapped and disadvantaged must be counted twice.

Option Two: Incentives for Achieving Balanced Enrollments.

The basic formula (1) could also be modified to encourage recipients to balance programs by race and sex. For programs that are out of balance racially, the state would calculate the increase in minority enrollments, ME, from the previous year. For programs that are sexually imbalanced, the state would calculate the increase in males and females (one or the other depending on the nature of the imbalance), SE, from the previous year. Each increase would be weighted and included in the general formula as follows:

$$WE = VE + aHE + bDE + cLEP + dME + eSE \quad (4)$$

States choosing to adopt this option would be free to determine the weights d and e. Weights in the range of .05 to .2 seem appropriate and likely to offer effective incentives.

Option Three: Weighting Enrollments
to Reflect Differences in Program Costs.

States able to determine differences in costs per student among different programs could modify formula (1) to account for these differences. First, using formula (1), weighted enrollment in each program-- WE_1 , WE_2 , WE_3 , . . . --must be calculated:

$$WE_1 = VE_1 + aHE_1 + bDE_1 + cLEP_1 \quad (5)$$

Then weighted program enrollments are further weighted to reflect cost differences:

$$WE = p_1WE_1 + p_2WE_2 + p_3WE_3 + \dots \quad (6)$$

where the coefficients p_1 , p_2 , p_3 , . . . are weights adjusting for differences in costs. For example, consider a recipient with three different programs costing \$950, \$1,075, and \$1,320 per student respectively, against an average cost of \$1,000. Weighted enrollments in these programs are respectively 75, 67, and 84. Then total weighted enrollment would be calculated:

$$WE = .95(75) + 1.075(67) + 1.32(84) \quad (7)$$

$$WE = 71.25 + 72.025 + 110.88$$

$$WE = 254.155$$

Note that this optional cost-weighting formula can include any or all of the features available under Options 1 and 2.

Determining Fiscal Capacity

The fiscal capacity of an eligible recipient would be determined using one of two methods, one employed for vocational education programs not supported with any local tax revenues and another for those that do receive local funds. In the first case, fiscal capacity is simply budgeted expenditures for vocational education, excluding any anticipated revenues under

VEA and required state matching funds. In the second case, fiscal capacity is computed based on equalized assessed property values and personal income (where available). This calculation is a bit more complicated and requires elaboration.

Using the conventional measure of local fiscal capacity, assessed property value, fails to distinguish between localities with significant differences in income. Consequently, one typically finds a number of high wealth LEAs with large numbers of low-income households and a number of poor LEAs with large numbers of high-income households. To avoid these inequities, most students of public finance now agree that measures of local fiscal capacity should reflect differences in both property values and incomes. However, property values and personal income cannot be directly compared. In the language of economists, the first is a "stock", the second is a "flow", and to be properly compared a flow must be converted to a stock or vice versa.

One way to compare and combine property values with personal income is to impute the income (the flow) that is produced by property values (the stock). This can be done if the rate of return to property is known or can be estimated. For example, if a house worth \$100,000 returns \$10,000 annually in net rent, the net rate of return is 10 percent per annum. Alternatively, an investor able to realize a net rate of return of 10 percent in high grade government bonds would pay no more than \$100,000 for a house returning a net rent of \$10,000 since to pay more would diminish the rate of return relative to what could be obtained elsewhere. In other words, the relationship between property value, V , and rental income, RI , can be stated as follows:

$$rV = RI \quad (8)$$

where r is the prevailing interest rate. Thus, if the average prevailing rate of return to real property can be established, a measure of local fiscal capacity can be computed, LFC, that combines property value, V , and personal income, PI , as follows:

$$rV + PI = LFC \quad (9)$$

or

$$RI + PI = LFC$$

An estimate of total local income results, which for purposes of this legislation will be used to define fiscal capacity.⁴ The appropriate rate for r cannot be determined exactly. It is recommended that it be set annually by the Department of Education at the prevailing rate on long-term government debt, presently around 10 percent.

Once LFC is determined for each eligible recipient, it is necessary to establish a computational tax rate that can be used to compute a fair local contribution for vocational education. In states where the local contribution is known, it is recommended that this rate, t , be set at the average rate for the state:

$$t = \frac{\sum LE}{\sum LFC} \quad (10)$$

where LE is local expenditures for vocational education. This rate is for computational purposes only. Local eligible recipients are free to spend more or less local money on vocational education, but this rate will be used

⁴The purist will object that this approach leads to double counting since some rental income and return on capital are both partially reflected in personal income. This is certainly true in the case of rental income and is true of income on capital to the extent that earnings are distributed in the form of dividends. A more precise calculation might exclude rental property from the determination if such value could be readily determined. However, in our view, this is insisting on unnecessary precision.

to determine the expected share that will be used to distribute federal and state matching money. For each eligible recipient the state calculates the expected local share, ELS_d :

$$ELS_d = tLFC_d \quad (11)$$

To this amount is added additional funds used for vocational education, SA_d , excluding money received under VEA. These additional funds would include any state aid in excess of the 50:50 match and any federal funds from sources other than VEA used to provide vocational education. Hence for each eligible recipient, total fiscal capacity, TFC_d , is now:

$$TFC_d = ELS_d + SA_d \quad (12)$$

For eligible recipients with no local contribution, ELS_d is zero, and TFC_d is based on SA_d only--the first case described above. The final step in calculating relative financial ability, RFA_d , will now be performed:

$$RFA_d = \frac{TFC_d}{WE_d} \quad (13)$$

Relative financial ability, a measure of expenditures per unit of weighted enrollment and adjusted for differences in local fiscal capacity and state aid, can be used to determine the distribution of federal VEA funds and state matching monies, the final step in the distribution process.

Distributing Federal and State VEA Funds

After RFA_d has been determined for every eligible recipient, recipients are ranked from lowest RFA to highest. Vocational Education Act funds and state matching funds are then used to level up, bringing expenditures per student of the LEA with the lowest RFA up to expenditures per student of the second lowest, these two up to the level of the third and so forth until funds are exhausted. Generally, the procedure would go forth as follows:

Step 1:

$$(RFA_2 - RFA_1)WE_1 = VEA_1 \quad (14)$$

This calculates the minimum amount of money available to the LEA with the lowest RFA. If this figure is greater than total federal and state dollars available, it would be prorated. If funds remain, one would proceed to the next step.

Step 2:

$$(RFA_3 - RFA_2)(WE_1 + WE_2) = VEA_2 \quad (14a)$$

This calculates the amount necessary to bring the first two up to the level of the third with VEA_2 divided among recipients 1 and 2 in proportion to enrollments [i.e., recipient 1's share is $\frac{WE_1}{WE_1 + WE_2} (VEA_2)$]. If funds

remaining are insufficient to cover VEA_2 , VEA_2 must be prorated and divided between recipients 1 and 2 in proportion to weighted enrollments. If funds remain, one would proceed to level the first three up to the level of the fourth.

Step 3:

$$(RFA_4 - RFA_3)(WE_1 + WE_2 + WE_3) = VEA_3 \quad (14b)$$

The same rules used in Step 2 apply here. If funds are inadequate to cover the full amount of VEA_3 , the amount is prorated and distributed among the three LEAs in proportion to weighted enrollment. If funds remain, the leveling up procedure continues.

This leveling up procedure applies only to funds distributed under Part I. Part II funds would be allocated on a per capita basis directly to eligible cities from the Department of Education. Part II funds to rural areas would also be awarded directly by the Department of Education on a competitive basis. Finally, Part III funds, along with the state match,

would be distributed by states to eligible recipients on the basis of equal amounts per unit of weighted enrollment (WE as calculated for purposes of distributing funds under Part I). These procedures would be clearly specified in the legislation, along with the range of weights states would be permitted to adopt.

Reporting Requirements

Under this proposal annual reporting requirements would be substantially reduced. Each state would submit an Annual Plan and Accountability Report using a format common to all states. The Annual Plan would be concerned primarily with describing for the upcoming fiscal year the procedures for distributing federal and state matching funds, as well as the goals for achieving balanced enrollments. The Accountability Report would describe, for the previous fiscal year, actual expenditures and enrollments and evaluate recipients' progress toward achieving enrollment balance.

Annual Plan

The Annual Plan would have two major sections. The first would describe the procedures used by the state to distribute funds to eligible recipients. It would report five categories of information:

- (1) the distribution formula adopted by the state--that is, the required minimum formula or any of the three options,
- (2) the weights assigned to the coefficients for variables in the adopted formula,
- (3) the scores of eligible recipients on each of the variables and total weighted enrollment,
- (4) property value, personal income, and state aid for each eligible recipient, as well as the computational tax rate used by the state, and

- (5) allocations to eligible recipients under Parts I and III.

The second section on the plan would describe goals for achieving balanced enrollments and would report the following information for each recipient of VEA funds:

- (1) the number of programs completely in balance and the number of students enrolled in these programs, and
- (2) each program that is out of balance, the magnitude of the imbalance, and the annual goal for making sufficient progress toward balance.

Accountability Report

The Accountability Report would contain four sections. The first would describe actual expenditures by eligible recipient for vocational education as follows:

- (1) federal and state expenditures under Parts I and III,
- (2) additional state expenditures on vocational education, and
- (3) local expenditures for vocational education.

The second section would report for each eligible recipient:

- (1) enrollments by race, sex, handicap, disadvantage, and limited-English proficiency for each four-digit OE program code, and
- (2) enrollments by race, sex, handicap, disadvantage, and limited-English proficiency for each apprenticeship, cooperative, or other program with related work experience.

The third section would report for each eligible recipient those programs that were in balance at the outset of the year and those that achieved balance by the end of the year. The fourth section would describe for each eligible recipient programs that were not in balance at the close of the year. It would describe:

- (1) programs in which sufficient progress had been achieved, and
- (2) programs that had not achieved annual progress goals including an assessment of why goals had not been achieved and a statement of action taken.

Some Concluding Comments On Coordination

The responsibility for expanding high quality programs and improving the access of groups heretofore underrepresented in these programs cannot be borne by vocational education alone. The proposed legislation establishes some strong incentives for vocational educators to address these twin aims more effectively, but better coordination with federal programs must be achieved if greater program improvement and accessibility are to be realized. Specifically, federal policy must recognize that some students--minorities, women, handicapped, and disadvantaged--face higher costs and greater risks in opting for many of the better training programs. As was explained, even when room can be made for these students in vocational education programs, the time and money required to obtain the required entry level skills, as well as doubts about employment prospects, create substantial obstacles that may discourage students from opting for more technical and more demanding training. How can federal policy reduce these disincentives?

First, as part of their effort toward achieving balanced enrollments in vocational education, recipients of federal funds could be required to guarantee, to underrepresented students, enrollment in the program of their choice, conditional only on satisfactory completion of the prerequisites. The number of guaranteed openings would equal the recipients' annual enrollment goals for achieving balanced enrollments. Second, for students in secondary programs, a portion of funds distributed under ESEA would be

reserved to provide these students with the remedial instruction and basic skills necessary for admission to the vocational education program. For students in postsecondary programs, a portion of funds authorized under the Higher Education Act would be reserved to provide stipends for students pursuing necessary background courses required for entry into certain occupational training programs. To qualify for such funds, a student would be required to develop with college counselors an Individualized Career Program (ICP) specifying the student's career objectives, the training desired, the necessary prerequisites from the general postsecondary curriculum, and a schedule for completing the program. The ICP would represent a contract between the student and the institution, with the student receiving from the institution a guarantee of financial support and placement in the desired occupational training program in return for satisfactory performance by the student within the agreed upon schedule.

To better address the problem of limited job opportunities upon completing the program, it is proposed that a job development grant be included as part of the ICP. This grant, which might represent a wage subsidy of up to 50 percent of the student's first year wages, would follow the student and could be used in any job of the student's choosing, once the basic skills education and occupational training had been completed. Further, if the student left the job during the first year, the unused portion would be transferrable. The ability to transfer the grant could apply both to changes in position within a single firm and to changes from one firm to another. Thus, if the grant guaranteed a percentage of wages reimbursed rather than a flat amount, it would contain a built-in incentive for employers to promote qualified students quickly; however, some safe-

guards might be needed to prohibit unwarranted demotions when the grant expired.

A possible source of funding for job development grants is the existing CETA program, perhaps using the 22 percent setaside for vocational education as well as other CETA funds now used to create jobs. Presently, CETA tends to create jobs indiscriminately with little attention to the capabilities of those eligible, to present labor market conditions, or the long-term employment objectives of CETA workers. An advantage of a job development grant under the control of the student is that the type of job, size of firm, and location can be more closely tailored to the student's individual desires.

These are but two examples for better coordination among different federal programs, and there are undoubtedly other opportunities for developing more integrated programs for training and job development. Community development grants, Small Business Administration programs, programs administered under the Economic Development Administration, and HUD's housing rehabilitation programs all have as one of their objectives job creation and training; however, none of these programs is closely tied to local educational systems, CETA, or other manpower programs. A strong commitment to an integrated approach to developing basic skills, occupational training, and creating more good jobs would include a thorough review of these other federal programs with much more attention to the contradictions among them, as well as opportunities for linking them more effectively. Much research needs to be done in this area of policy analysis and development.

In closing, it is recognized that adopting legislation of the type proposed would require more careful attention to details, as well as some

estimates of how the distribution of funds would differ from that produced by present law. However, it is hoped that this proposal serves to focus the debate about reauthorization on what federal objectives ought to be regarding vocational education and whether states and localities can reasonably be held accountable for addressing them. It is hoped further that serious consideration of this proposal would help to avoid the divisive and largely unproductive infighting among the various special interest groups seeking their share of the federal dollar and control over how its spent. What states and localities ought to be trying to accomplish in vocational education strikes us as an eminently appropriate and important concern for federal policy. How they do it is their own affair and in any event not something the federal government can expect to control with much competence or useful result.

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Competitive Employment for Mentally Retarded Persons: Costs Versus Benefits

by

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Several different definitions of cost-benefit analysis have been developed for use in education (Cohn, 1979; Conley, 1973; Prest & Turvey, 1975; Webb, 1976). Each, however, similarly assesses the financial impact of educational projects by looking at the quantifiable costs and benefits that occur over a specific period of time. Although cost-benefit analyses should not ever become the sole reason given for discontinuing or continuing projects that serve handicapped populations (e.g., sheltered workshops, group homes), cost-benefit analyses can aid in demonstrating that, dollar for dollar, certain habilitation approaches return more to society than others (Bernard, 1979).

Community-based alternatives for mentally retarded persons typically include a range of residential and employment services. Residential options include large intermediate care facilities, group homes and foster homes; employment options often include day care and work activity centers, sheltered workshops, and competitive employment. To date, the mental retardation literature suggests savings are accrued when persons are moved toward less restrictive community-based residential alternatives (Intagliata, Willer, & Cooley, 1979). This literature also suggests that group homes are considerably more costly than foster family or natural family alternatives.

Typically, sheltered workshops offer diverse services to an even more diverse population of handicapped persons (Whitehead, 1979). Among these services are day care, work activity, extended sheltered employment, work evaluation, and transitional employment. Transitional employment refers to training for competitive employment. Although cost comparisons have been made for sheltered workshops located within institutional settings versus community settings (Intagliata et al., 1979) and for the typical services offered among sheltered workshops and across handicapping conditions (Whitehead, 1979), little is known about the actual costs associated with transitional employment training.

Transitional employment training for competitive employment has been criticized because the available data on successful placements have been quite discouraging (Whitehead, 1979). It has been suggested that existing success rates refer to placements that have been successful due to their own abilities prior to association with sheltered workshops. Rusch and Mithaug (1980) indicated that it is quite possible that "successes" are typified by persons gaining little, if any, actual training. They further suggest that training will be the primary factor that will change the actual number of persons competing for employment in the public sector.

Recently, Rusch, and Mithaug (1980) and Wehman (1981) delineated the steps necessary to competitively employ mentally retarded adults. An implicit assumption of both approaches is the existence of staff to provide training, placement, and follow-up services. Rusch and his colleagues at the University of Illinois at Urbana-Champaign and Wehman and his colleagues at Virginia Commonwealth University suggest the train-place-train approach to vocational habilitation for competitive employment results in a

success rate in excess of 50 percent with persons previously thought to be unemployable.

Both Rusch (1980) and Wehman (1981) have assumed that cost-benefit savings would be considerable if persons who had formerly been state-supported could, at some point in their lives, be self-supporting contributors to society. The Employment Training Project at the University of Illinois at Urbana-Champaign under the direction of Dr. Frank R. Rusch sought to determine, through accounting and budgeting procedures, whether the costs and benefits of the train-place-train approach to competitive employment were comparable to the costs and benefits of individuals employed in extended sheltered employment (i.e., sheltered workshops).

Method

Subjects

Table 1 displays individual demographic characteristics for persons trained, placed, and followed-up by the Employment Training Project between September 1978 and June 1980. Twenty-two mentally retarded adults ages 19 to 45 ($\bar{x} = 29$) entered the training project. Two individuals did not complete the training program, three were terminated during employment, and seventeen were employed as kitchen laborers/helpers. To estimate IQs the Wechsler Adult Intelligence Scale (WAIS), the Wechsler Intelligence Scale for Children, the Peabody Picture Vocabulary Test, the Slossen, and the Stanford-Binet Intelligence Test were used. Excluding two persons for whom tests were not available (13 and 18) and two for whom tests were not administered due to "untestability" (6 and 14), scores ranged from 23 on the Slossen to 82 on the WAIS. On two occasions the Slossen was administered followed by the Peabody. These scores for Sub-

Table 1
Demographic Characteristics for 22 Retarded
Adults Entering the Employment Training
Field

Subject	Sex	Age	I.Q. ²
002	M	27	51-WA
003	F	27	54-WA
004	F	28	76-P
005	F	27	62-P
006	F	24	Not testable
007	M	24	31-S
008	F	40	23-S; 55-P
009	M	23	36-S; 69-P
010	F	26	66-P
011	F	24	40-S
012	M	32	73-P
013	M	24 ¹	Unknown
014	M	45 ¹	Not testable
015	F	26	60-P
016	F	43 ¹	28-SB
017	F	32 ¹	49-WA
018	M	24 ¹	Unknown
019	M	31	63-W
020	M	19	73-SB
021	M	33	45-WA
022	M	25	82-WA
023	F	27	67-WA

¹ estimates.

² I.Q. WS: Wechsler Adult Intelligence Scale
I.Q. P: Peabody Picture Vocabulary Test
I.Q. S: Slosson Intelligence Test
I.Q. W: Wechsler Intelligence Scale for Children
I.Q. SB: Stanford-Binet Intelligence Scale

jects 8 and 9 respectively were 23 and 36 for the Slossen and 55 and 69 for the Peabody.

Each of the individuals, prior to entering the training project, was employed in a sheltered workshop (extended sheltered employment or work activity). Eleven were males and 11 were females. Prior to training, 14 individuals resided in a 60-bed intermediate care facility for the developmentally disabled (ICF/DD) and eight lived with their parents. (See Table 2) Eligibility criteria for admission to the project included (1) no physical handicap, (e.g., paralysis) correctable hearing, and sight; (2) 18 years of age; (3) 5 feet, 2 inches tall, and controlled seizure activity.

The Employment Training Project

The Employment Training Project began in 1978 with a seed grant from the College of Education at the University of Illinois. Since its inception additional funding was acquired from the Illinois Department of Rehabilitation Services, the Illinois Department of Public Aid, and the Illinois Department of Mental Health and Developmental Disabilities. The expressed purpose of the project was to train and employ mentally retarded adults in the Food Service Division of the Department of Housing and Food Services at the University of Illinois at Urbana-Champaign. The procedures and practices followed by the Employment Training Project are detailed in Rusch and Mithaug (1980). For extended discussions of subject and setting variables, readers are referred to a number of studies which were conducted during the two years of the project's existence. (Karlson and Rusch, in press; Menchetti, Rusch & Lamson, in press; Rusch & Menchetti, in press; Rusch & Schutz, 1979; Rusch & Schutz, in press; Rusch, Weithers, Menchetti & Schutz, 1980; Schutz, Jostes, Rusch, & Lamson, 1980; Schutz, Rusch, & Lamson, 1979).

Table 2

Days Enrolled in the Employment Training Program,
Previous Employment Experience, Pre-Training Residential
Placement and Post-Training Residential Placement

Subject	Pre-Training Experience Employment	Pre-Training Residential Placement	Post-Training Residential Placement
002	Unknown	ICFDD ¹	Apartment
003	Unknown	ICFDD	ICFDD
004	Sheltered Workshop (9) ³	ICFDD	Apartment
005	Sheltered Workshop (5)	ICFDD	Apartment
006	Sheltered Workshop (4)	Parents' Home	Parents' Home
007	Sheltered Workshop (1)	ICFDD	Apartment
008	Sheltered Workshop (2)	ICFDD	Apartment
009	Sheltered Workshop (2)	ICFDD	ICFDD ²
010	Unknown	Parents' Home	Parents' Home
011	Sheltered Workshop (2)	ICFDD	ICFDD
012	Sheltered Workshop (6)	Parents' Home	Parents' Home
013	Unknown	ICFDD	ICFDD
014	Unknown	ICFDD	Parents' Home
015	Sheltered Workshop (1)	Parents' Home	Parents' Home
016	Sheltered Workshop (4)	ICFDD	ICFDD ²
017	Sheltered Workshop (16)	Parents' Home	Parents' Home
018	Unknown	Parents' Home	Parents' Home
019	Unknown	ICFDD	Apartment
020	Newspaper Co. (6)	Parents' Home	Parents' Home
021	Unknown	ICFDD	ICFDD
022	Unknown	Parents' Home	Parents' Home
023	Unknown	ICFDD	ICFDD

¹ - Intermediate Care Facility for Developmentally Disabled

² - Slated for apartment

³ - Number of years prior to entering vocational training program

Procedures

Costs. The direct and indirect costs that provided support for training, placement and follow-up services between July 1978 and June 1980 for the training project were analyzed. These data were obtained from the actual grant budgets. The direct costs considered were personal services, contractual, commodities, and travel. Indirect costs covered agency, administrative, and business office expenses for the executive director, business office manager, bookkeeper, clerk/typist, administrative secretary, associate director, and community educator. Costs for bus passes and taxi fares were not considered a cost factor since transportation would be required of most jobs and would not be considered as a cost to the program. It was from these costs and the average yearly earnings per individual that 10, 15, and 20 year projections of costs and earning were calculated.

Benefits. Benefits, for the purposes of this investigation, refer to the gross earnings of each individual. Earnings were obtained for the 22 mentally retarded adults trained in food service related tasks and competitively employed as kitchen laborers in the university community from September 1978 to June 1980. The information was obtained from individual time cards at the university's payroll department. In addition to earnings, wages, number of hours worked per day and per week, days absent--excused and unexcused, minutes and hours late, and days suspended were accumulated. These data were used to determine the average earnings per year.

Costs Versus Benefits. From the yearly costs and earnings, cumulative costs and earnings were projected each year for a ten year period, for the fifteenth year and the twentieth year. Costs of the training project remained constant for each year. Earnings consisted of those individ-

uals who were in training and competitively employed for the year. Earnings accumulated over each year were subtracted from the cumulative costs as a measure of a cumulative net cost or benefit. The average net cost per individual entering the project was determined by summing the number of times individuals (number of person years) contributed to the cumulative cost-benefits over a set period of time, and dividing that figure into the net cumulative cost-benefits. For individuals trained and then competitively employed, net cost-benefits were determined yearly and accumulated for the ten year period. Earnings for all individuals employed, including those terminated, were subtracted from the costs for placement and follow-up. The net figure was then divided by the number of individuals competitively employed based on full-time equivalency units. Individuals being trained during the first half of the year and those terminated were each given a weight of one-half of one unit. Individuals employed for a full year were assigned a weight of one unit.

Sheltered Workshop Comparison

Costs and earnings of a local sheltered workshop were obtained for the identical periods, i.e., years 1979 and 1980. Other relevant information which was not available through the sheltered workshop was procured from the Department of Labor reports prepared by Whitehead (1979).

Based on the average number of hours worked daily, the average monthly attendance of clients, and payments to clients, an average yearly payment per client and average hourly wage were calculated for clients in the sheltered workshop.

The net cost to society for each client in a typical sheltered workshop was obtained by subtracting the dollar amount of contracts acquired during

a year from the total operating expenditures and dividing this figure by the average number of clients in attendance. Projections for the next ten years were determined from a yearly cost to society. The cost to society for the next ten years for one client would be calculated by multiplying the average yearly cost by ten.

The average yearly cost to society for an individual working in a workshop was used to determine the cost to society if those individuals in the Employment Training Project were working in a sheltered workshop for the ten years instead of their current placement. This figure was obtained by multiplying the average cost per individual times the number of individuals in the training program and employed for each of the ten years.

Results

It was projected that each year approximately one person out of seven being trained and two individuals already competitively employed would be terminated. Thus, only four additional adults would be added each year to the cumulative number employed. A projection of the number of adults continuing/not continuing through training and competitive employment was determined for the ten year period. Approximately 78 individuals would start the training period. Ten would not continue past training. The expected cumulative number of adults employed at the end of the tenth year would then be 49. During the ten year period, it was estimated that 29 adults would be terminated.

During the first two years of the Employment Training Project, actual data (Table 3) were used to project the costs and earnings for the next 8 years with additional projections at 15 and 20 years. During the

first four years the net cumulative cost would reach its highest point at \$152,842. During the fifth year of the project the benefits would begin to exceed the yearly cost, resulting in a downward trend in cumulative net costs to society for the project. During the eighth year the cumulative benefits would exceed the cumulative costs resulting in a net cumulative benefit of \$458. After ten years of the program, the net cumulative benefit would result in a benefit of \$212,420; after 15 years, a net cumulative benefit of \$1,024,225; and in 20 years, earnings from competitive employment would generate earnings resulting in a net cumulative benefit of \$2,117,930.

Comparisons of the benefits and costs for training, placement, and follow-up of 49 mentally retarded adults versus the alternative placement of these individuals in sheltered workshops are also displayed in Table 3. The cost for placement of ten mentally retarded adults in a sheltered workshop for one year was an average of \$50,276. Similarly, the cumulative cost for 49 individuals placed in a sheltered workshop instead of the Employment Training Project would be \$1,543,467 in 10 years, and for 89 individuals in 20 years, the cumulative costs for sheltered employment would exceed \$5,000,000.

Discussion

Based upon a two year period, the benefits and costs of 22 moderate-severely retarded adults trained and competitively employed as kitchen laborers were investigated. These data were compared to the cost-benefit of individual employment in a typical sheltered workshop. Competitive employment resulted in a positive benefit after the seventh year. By comparison, an individual placed in a sheltered workshop represents a constant cost to society.

Table 3

**Actual and Projected Distributions for Numbers of New Trainees as well as
Net and Cumulative Costs to Society for Competitive versus Sheltered Employment Placements**

		1	2	3	4	5	6	7	8	9	10	15	20
		Actual		Projected									
		78-79	79-80	80-81	81-82	82-83	83-84	84-85	85-86	86-87	87-88	92-93	97-98
Net number of new individuals trained and placed in competitive employment each year	ETP	10	7	4	4	4	4	4	4	4	4	4	4
	SW	0	0	0	0	0	0	0	0	0	0	0	0
Cumulative number of individuals trained and placed in competitive employment each year	ETP	10	17	21	25	29	33	37	41	45	49	69	89
	SW	0	0	0	0	0	0	0	0	0	0	0	0
Net yearly cost to society for sheltered versus competitive employment placements Training cost-earnings	ETP	17.425	76.725	40.607	18.085	-4.497*	-27.049	-49.601	-72.153	-94.705	-117.257	-184.913	-241.293
	SW	50.276	85.469	105.579	125.690	145.800	165.910	186.020	206.131	226.241	246.351	346.903	447.455
Cumulative costs to society for sheltered versus competitive employment placements	ETP	17.425	94.150	134.757	152.842	148.345	121.296	71.695	-458	-95.163	-212.420	-1,024.225	-2,117.930
	SW	50.276	135.745	241.324	367.014	512.814	678.724	864.744	1,070.851	1,297.116	1,543.467	3,076.879	5,113.048

* Negative sign indicates an income generating rather than an income depleting effect upon society

ETP = Employment Training Project

SW = Sheltered Workshop

NB For more detailed information about training costs and earnings that were used to complete these summary statistics, the reader is invited to contact the staff of the LTI

Several monetary benefits accrued to the individual and to society as a result of competitive employment. Individuals in the sheltered workshop earned considerably less money per hour than those competitively employed (\$.76 vs \$3.44). For individuals living at home with their family or independently in an apartment, enough money was earned to enjoy many of society's pleasures such as going out to dinner or going to a show with friends or co-workers. As a result of employment, six persons associated with this project moved into apartment settings (Table 2).

For society the monetary benefits were realized in a variety of ways. In addition to national income being increased, tax revenues (federal and state) also increased. It is from these taxes that welfare payments (e.g., SSI and SSDI) are made to handicapped individuals. Because of increased income there is a reduction in the amount of payments made to handicapped individuals. This reduction is another source of savings to society (e.g., Department of Public Aid). An investigation into other savings to society would be a useful extension of this study.

An additional savings to society would appear to result from the retraining of individuals after being terminated during employment. The cost of training is less than the cost of placement in a sheltered workshop over time. Without retraining, the amount of lost earnings as well as lost federal and state taxes would appear to be substantial. In addition to the monetary returns to society and the individual competitively employed, there were nonmonetary benefits for the individual. One nonmonetary benefit to the individual consists of observing appropriate social skills and behaviors needed to interact with co-workers in a working environment. These social skills and behaviors are essential if retarded adults are to be integrated successfully into the workforce and the community. Bijou (1966)

suggested that individuals excluded from non-sheltered settings develop socially inappropriate behavior.

Other nonmonetary benefits for the individual referred to the Employment Training Project included acquisition of useful skills, full medical coverage, partial dental coverage, a comprehensive retirement plan, voluntary union participation, admission to a residential program that trains each competitively employed person to live independently, and increased self-respect and usefulness to society.

Although there are many advantages to training for competitive employment, it is important to mention some of the disincentives. There were three major disincentives which became apparent after training. First, due to the limitation of time and materials it was not feasible to provide the needed massed trials required by trainees. For example, there was only one available soup kettle which could be cleaned during the day. A second major limitation of the project was that the data do not include the amount of unscheduled time needed to work on other skills such as grooming, time management, and riding the bus. It would be important to know this information since it involved time, some money, and represented an important aspect of this project. Perhaps the third limitation, "down time," provided the biggest obstacle in the provision of services during training. Down time occurred during typical university school breaks (e.g., Thanksgiving, Christmas, and inter-semester breaks). Because so many students left school, the food services training site was closed. Even though other social and survival skills were taught, some progress was lost and some retraining was needed. This raises the question that perhaps training should occur in off-campus settings.

Three limitations were also identified after training which had a significant impact on this project. Because food service industries operate on weekends and evenings, the means of finding a ride to work were difficult at these times. Bus schedules and routes were different for nights and weekends than during the day. The typical alternative to the bus system was the taxi. However, because of their inconsistency in arriving on time, the amount of time one has to wait for a taxi cab, and high costs, taxi cabs provided an ineffective and inefficient means of transportation. A second limitation of the project was that the adults were employed in the Food Service Division of the Department of Housing and Food Services at the University of Illinois at Urbana-Champaign as opposed to being placed in restaurants outside university settings. Peterson, Rusch, and Sowers' (1976) survey in the Seattle area on restaurants' willingness to hire retarded, young adults indicated a lack of desire to employ retarded adults. One variable which might contribute to the successful integration of retarded adults into the food service industry would be the acceptance by employers and employees to work with mentally retarded adults. A third limitation occurred during school breaks and the summer when work hours were determined according to seniority (the number of years employed with the university). This procedure for determining hours affected each of the adults employed (i.e., "down time"). Just as during training, skills were lost during this time. Loss of skills results in possible termination. Perhaps retraining should take place during "down time" to prevent the possible loss of an individual's job.

The literature has reported that mentally retarded individuals will always require some form of periodic follow-up by a case manager (Wehman et al., 1980). Whereas this process may appear quite costly, consider the

alternative of the cost for placement in a sheltered setting. Data in this investigation suggests that placement in a sheltered workshop will always cost whereas, competitive employment with follow-up becomes beneficial after a relatively short period of time. If employers could be trained to do most of the follow-up work, the case manager would be required less often and costs might be further reduced. However, no matter how convincing the argument for nonsheltered competitive employment, there are some, and perhaps many, mentally retarded adults who would rather work in a sheltered workshop.

The welfare system contains disincentives which have kept many mentally retarded adults from entering vocational training programs. A mentally retarded person earning less than minimum wage at a sheltered workshop and living in a group home can draw benefits equal to the amount earned by an individual competitively employed. Benefits can be received from Social Security Disability Insurance, Supplemental Security Income, and Title XX programs. Unless the nonmonetary benefits to competitive employment are accepted by mentally retarded adults, these individuals will continue to work in sheltered settings and live in group homes. It would appear that a sizeable amount of federal and state money would be saved if these individuals could become contributors to society instead of users of society's money.

In summary, the results of this investigation suggest that by the eighth year, this particular training program is cost-beneficial for mentally retarded adults, as opposed to placement in a sheltered workshop. It is important that the results in this study be considered applicable to similar settings. If integration of mentally retarded adults into the community is to be supported, projects with evidence to support the data found in this

project are needed. It will be through the opportunities provided in projects such as these that mentally retarded individuals will truly become contributing participants of society.

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Cost Benefit Analysis of Placing Moderately and Severely Handicapped Individuals Into Competitive Employment

by

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The issue of fiscal accountability in human service programs is not new. Yet in the last half of the decade, with inflationary pressures mounting on the economy and the mood of the country turning increasingly conservative, cost-benefit analysis has taken on special significance. Politicians, administrators, and concerned citizens want to know what their tax dollars are buying for handicapped people. Unfortunately, most human service and education programs do not provide sufficient assessment of efforts on a cost-benefit basis, but almost exclusively on a human needs basis. We no longer have this choice.

The best human service programs designed to demonstrate the ratio of costs and benefits should be well developed and monitored job training and placement programs for handicapped individuals, especially those with moderate and severe handicaps where the cost of services escalates with degree of handicap. Two recent papers have addressed this area. Schneider, Rusch, Henderson, & Geske (1981), and Cho & Schuermann (1980) both have analyzed the economic costs and benefits associated with training moderately and severely handicapped persons. In the Schneider et al., paper especially, there was an interesting analysis of actual and projected costs for approximately 20 mentally retarded persons who were com-

petitively employed. The projections run to 1997 and focus heavily on the wages earned by the clients in their study.

It would appear that in order to further document the value of job training and placement programs for handicapped individuals heretofore considered "too handicapped" for a competitive job, costs and benefits must be further analyzed in respect to other programs. Therefore, we have undertaken an analysis of several cost and benefit dimensions associated with Project Employability, a job placement program established in 1978 for moderately and severely handicapped individuals (Wehman, 1981; Wehman & M. Hill, 1980; Wehman & J. Hill 1979). The purpose is twofold: First, we wish to expand the literature in this area with different dimensions of analysis, and second, we aim to establish the cost basis validity of a train-er-advocacy intervention model. This model is characterized by providing a staff person for training and advocacy at the job site once the client has been hired by the employer into unsubsidized employment. The staff person reduces his/her time from the job site once the client becomes more independent.

A concerted effort to identify actual costs and benefits to the taxpayer concerning the clients placed into competitive jobs has been undertaken. Taxes withheld, fees for public services, Supplemental Security Income and gross income reported have not simply been estimates of what might have happened; rather the figures reported here are an attempt to present an analysis of how the taxpayer has actually benefited or suffered from our job placement and job site training activities.

We have defined benefit to society as "a reduction of the financial burden placed on taxpaying citizens for the care of disabled persons." The focus is on what the public must pay, not the amount of personal

income generated by our employed clients. Gross income is considered a benefit to the individual as opposed to society, in that, most if not all of the jobs held by disabled persons would be held by nonhandicapped individuals in their absence. The effect of the economy due to expendable income then is probably negligible. Other personal development advances are considered beneficial to society but not on a financial basis.

Presently public service budgets are unlikely to be increased; therefore a major dilemma faced by administrators is the judicious appropriation of available funds. The maintenance and development of social service programs must be viewed in a holistic framework. That is, priorities must be identified, a continuum of services developed and program costs delineated. As the cost effectiveness of a program increases, so too, is the size of the population served able to grow. Consequently the provision of services to the greatest number of people with limited amounts of capital requires cost analysis of each program. Many human service programs must be provided on the basis of need only, regardless of expense; yet even these basic needs programs should be closely scrutinized for efficiency of operation.

Project Employability is in the unique position of having access to many financial variables affected directly by the programs operation. Furthermore, the individuals served by Project Employability have been significant tax users and thus an attractive population for a cost analysis. Project Employability's goal for the severely handicapped individual is greater independence, that is, less external control and greater freedom of consumer purchasing power via competitive job placements. Vicarious benefits to society run concurrent with the attainment of these individual goals and include: increased tax revenues, greater upward flow in the continuum of vocational services, higher expectations of disabled persons by

family, friends, employers, and professionals and a reduced tax burden. In choosing appropriate programming for the disabled, confirmation of the above mentioned benefits would strongly support the positioning of job placement (trainer-advocate) programs for the severely disabled as high priority.

The following cost analysis provides the information necessary in estimating the efficacy of Project Employability over a three year period. It involves 56 severely disabled individuals who have been employed in a competitive job over the past 30 months. It is notable that all or most of these individuals were considered by other professionals to be "realistically unemployable."

Method

Participating Clients

The disabled individuals placed into competitive employment by Project Employability from September 1978 through March 1981 comprise the subject pool. One individual placed was not included in the data due to the non-severe nature of his handicap and the limited amount of staff time utilized to make his job placement.

According to each client's most recent formal evaluation, or as reported by the referring agency when these records were not available, the range and frequency of the subjects' disabilities occur as described in Table 1.

Project clients were referred from a variety of agencies in the local communities in and around Richmond, Va. and from Community Alternatives, an adult services program in Virginia Beach, Va., which was a replication site. Sheltered workshops, adult service centers, Department of Rehabili-

Table 1

Disability, Rehabilitation Status, and Present Work Status:
56 Clients Placed Into Competitive Jobs October '78 -
March '81

Reported Disability at Placement Date	Number Placed Into Competitive Jobs	Rehabilitation Department Status at Placement	Present Work ¹ Status			
			PE	R	LO	T
Mildly Mentally Retarded	4	4 Severe	3	1		
Moderately Mentally Retarded	29	24 Severe 5 None	15	5	3	6
Severely Mentally Retarded	2	1 Severe 1 None	1	1		
Multiple Disabilities	21	18 Severe 3 None	16	3	1	1
TOTALS	56	47 Severe 9 None	35	10	4	7

¹PE - Presently Employed
R - Resigned
LO - Layed Off
T - Terminated

tation Services, public schools, and parents have comprised the referral sources accepted since the project began. Inclusion into the referral pool was dependent on two factors: first, the person must want to work and second, his/her disability is of a severe nature where gaining a competitive employment position without the trainer-advocate model would be considered highly unlikely. It was preferred that referrals were clients of the Department of Rehabilitative Services although this was not an exclusionary clause. All of the clients received or were eligible for disability payments through the Supplemental Security Income program (SSI). Additionally, most clients were receiving some form of on-going day programming although several individuals were either excluded from or waiting for day services and idle most of the day.

Procedure

The following data have been collected and reported in Figure 1 to evaluate the cost basis validity of Project Employability.

Portions of Figure 1 require explanatory remarks. For item #5 the Virginia DRS, after evaluating client disabilities and after reviewing each individual case, assigns a severe or non-severe label on each of its clients. Generally the label severe is used to indicate persons who will require some "significant specialized" service for competitive employment to become a reality. A person's case is "open" if he/she is still eligible to receive services. An individual's case can be reopened if there is an improved likelihood of achieving competitive employment. The status may have changed since Project Employability's initial placement; however, the status at placement date is reported.

Figure 1

Cost Benefit Analysis: Project Employability -
May '78 To March '81

1. Number of students	56	
2. Work Status as of March 31, 1981	Presently Employed 35 Terminated 7 Resigned 10 Laid Off 4	
3. Spectrum of Disabilities	Moderately Retarded Profoundly Deaf Behavioral Disorders Speech Impediment Severely Retarded Mild Sight Impairment Schizoid Personality Quadriplegia Cerebral Palsy	Non-verbal Hearing Los Seizures Arthritis Hypertension Alcoholism Legally Blind Schizophrenia
4. Age	$\bar{X} = 28$ Range = 20 to 58	
5. Virginia Department of Rehabilitation Services Status at Placement Date	Severe (Open) 25 Severe (Closed) 18 Severe (Extended Evaluation) 1 None 10 Severe 2	
6. Work Duration	Total Months Employed 631.5 Total Months Working 597	
7. Staff hours traveling to and present on job site	11,843	
8. Project Estimates Expenditures		\$247,618.00
9. (SSI) Supplemental Security Income Saved		\$ 99,016.00
10. Estimated Day Program Cost		\$169,161.00
11. State and Federal Taxes Withheld		\$ 25,499.00
12. Total Public Savings from SSI, Taxes and Day Program . .		\$293,676.00
13. Benefit/Cost Information	Benefits \$293,676.00 Costs \$247,618.00 Benefit/Cost Ratio 1.18	

Item #6 reports the client's work history in two dimensions. Months Employed lists the total number of months that passed while the client was formally employed although he/she may not have been receiving a pay check during the entire period, i.e., summer time periods. Months Working indicates pay periods and is likely to be less than the months employed figure due to seasonal work, illness or sick leave, and temporary lay-offs. This information is valuable in understanding low gross income relative to months employed.

Item #7 provides the number of staff hours spent with clients. Monitoring the amount of time spent with each client was instituted to provide a means for assessing an individual's progress and to provide for better administrative direction for staff members.

A key measure in evaluating staff-fading capability is the amount of time spent training the client. Amount of time data have been collected in two ways. From a cost effective standpoint, whether the trainer is intervening or not, time traveling to and at the work site translates roughly into funds expended on each client. Staff time was clocked beginning with travel to the job site and ending when the trainer leaves the site for another client, the office, or home. This measure, however, is not sensitive to the gradual fading of direct intervention since a basic fading strategy is reducing the trainer's availability from the client and supervisor. The trainer systematically increases the amount of time out-of-sight yet on-site for crisis intervention.

Trainers have been directed to measure (or estimate when necessary) the percentage of time at the job site where they were either directly intervening or easily available to the client and supervisor. When more than one client occupied a job site the travel time to the site was divided equally

among the workers. On-site hours for sites with more than one client were determined by using the intervention time as their percentage of the total time on-site.

For example, assume Bob and Bill work at the same job site and the total number of on-site staff hours is 500 with 50 additional hours of travel time to site. Assume further that 70% of staff intervention time went to Bob. To determine each person's portion of the total staff hours we divided the number of hours traveling to the site by the number of clients at the site (i.e., $50 \text{ hours} / 2 = 25 \text{ hours each}$) and added this figure to the individual's percentage of total on-site hours (i.e., $(70\% \times 500) + 25 = 375$ which would be Bob's share of the total staff hours). Bill's share of the total staff hours would be $(30\% \times 500) + 25 = 175 \text{ hours}$. An additional problem to surmount was the fact that specific data logs of trainer hours at the job site were not kept until June of 1979. Estimates were derived by interviewing each trainer who worked with those clients and by reviewing the clients anecdotal records. These estimates are believed to be quite accurate.

Although there are subjective elements in reporting the client's needs in staff hours on an individual basis, the overall amount of time spent by trainers with all of the clients traveling to and on-site is relatively stable and less subject to error. Therefore, the hours invested in each client represent a portion of the 100% effort and although the individual estimates may have small errors, we believe that, on the whole, these errors are cancelled out.

Item #9 regards supplemental security income saved. Persons whose disability significantly affects their ability to work are eligible for SSI payments. The Social Security Administration considers many factors when

determining a person's eligibility. Although it is not necessary here to describe the criteria eligibility it is important to note that all clients placed by Project Employability were receiving or were eligible to receive (SSI) payments.

Wehman & J. Hill (1979) have described earlier the federal government's attitude concerning the disabled person who begins earning substantial income:

the federal government does not view this person as suddenly rehabilitated or no longer requiring benefits, but rather, the disabled person is viewed as working regardless of his or her impairment (p. 50).

Through December of 1980 the SSI program utilized a nine month trial period where the disabled person could receive a partial SSI payment regardless of and in addition to the individual's salary. This trial period has been extended to 12 months beginning January, 1981. Some additional aspects of the SSI program which were considered disincentives to competitive work were changed in January, 1981 and are described in detail by Revell (1981), and Wehman, & M. Hill (1981).

Researchers evaluating the financial benefits of their vocational projects may be tempted to simplify savings in SSI disability payments by taking the individual's monthly payment and multiplying it by the number of months worked. However, this method will result in an overestimation of benefit due to the SSI regulations designed to wean recipients from public assistance.

The SSI payments reported in Figure 1 are derived from computing actual SSI reductions due to each client's earned income over the period of their employment. Pay raises, periodic SSI inflation rate adjustments, and

clients' living arrangements all affect the monthly SSI payment on a month to month basis and have been included in each client's SSI savings computations.

Item #10 is Estimated Day Program Cost. When a client is placed in the referral pool it is a necessary requirement that, as well as can be predicted, the person would not be able to attain competitive employment without utilization of the on-site trainer-advocate model. Although there is no way to substantiate that the person would not have become employed anyway, the various cooperating agencies have indicated that the individuals referred are considered unemployable without significant on-site intervention.

Benefits derived from maintaining competitive jobs may then be logically attributed to Project Employability activities. A major benefit the public receives from employment of severely disabled persons is the reduction of expensive day programming which does not lead directly to competitive remuneration. Adult activity centers, workshop programs, and public school programs were generally the variety of services that Project Employability clients attended or for which they were eligible prior to their involvement with the project. In a few cases all of the above services had been provided, yet the individuals had never worked competitively and were sitting idle, excluded from any day programming. No public financial benefit from termination of day programming is claimed for these clients although significant individual benefit is evident. These individuals had been excluded due to lack of usefulness, lack of progress and/or limited number of programming slots. The implication of wasted human resource should be evident.

Each client's case was reviewed concerning residence locality, day program status at placement date, age, Department of Rehabilitation Service status, and past history of day program involvement in determining the probable programming, if any, that would have been provided without competitive job placement.

Item #11, State and Federal Taxes Withheld, reports estimates for individuals claiming one dependent. Income tax is computed at 8 percent for federal and 1.9% for state contribution level and is in line with the clients' average annual salaries. Social Security contributions are not included here although they can be considered a significant benefit to the Social Security System. Each individual's actual contribution in taxes after Internal Revenue Service filing is not available and thus the figures provided here are best guess estimates.

Item #12, Total Public Savings from SSI, Taxes and Day Program, evaluates the total public savings to the taxpayer due to Project Employability activities. The following factors have been taken into consideration and combined: savings in SSI payments, expenditures of probable day programs displaced by employment, and federal and state taxes paid.

The final item, #13, provides the Benefit/Cost Ratio. It indicates that for every dollar spent the taxpayer reaps one dollar and eighteen cents in social benefits. Benefit/cost analysts recommend continuation of any program with a benefit/cost ratio in excess of 1.0. The ratio of Project Employability (1.18) clearly suggests a positive rate of return.

Results and Discussion

Fifty-six disabled persons were placed into competitive jobs between October 1978 and March 1981. Forty-two continue to work successfully as of March 31, 1981. Project Employability contributed 11,843 staff (trainer-

advocate) hours placing, training and maintaining through follow-up this working client population. A total of \$247,618 was expended during the three year period of May 1, 1978 to March 31, 1981, in support of Project Employability goals and objectives. This is contrasted by a total public savings of \$295,570. Thus, the total direct financial benefit to the public taxpayer is \$46,058 as of March 31, 1981. Obviously, each successive year of Project Employability's operation will see a substantial increase in the public benefit figure due to slow start up costs and the increasing population of successfully working disabled clients. Our 66 percent retention rate for those placed indicates a growing core of clients who are contributing to the financial savings to the public. The benefit to taxpayer figure takes into consideration the project's tax supported expenditures. The public benefited in Supplemental Security disability payment savings by \$99,000. Day programming service costs not necessary due to Project Employability placement of clients into competitive jobs totaled \$69,000 and, of course involved state and local as well as federal funds. Approximate state and federal income tax contributions of clients totaled \$25,500.

Each individual's consequential effect on the public taxpayer due to Project Employability efforts ranges from a high benefit of \$12,157 to a maximum cost of \$15,059. The high benefit figure will be constantly increasing due to improved evaluation tools and Project Employability staff's improved expertise at matching job and client. The total public benefit of public savings minus project expenditures equaled \$46,058. In less than three years the efforts of Project Employability have returned funds to the tax base; that is, the operation is running in the black where continued expansion of public financial benefit is certainly likely.

It should be evident from a review of these data that competitive employment programs for severely disabled individuals do work and that they can be cost effective, both to the public taxpayer and to the financial benefit of the individual. It is incumbent upon service providers who manage programs like Project Employability that careful figures be kept for cost and for benefit. The data presented herein are but a very small sample, in fact a microcosm, of many other programs which are currently successful in this country. The time is now for careful scrutiny of the cost benefits of such programs.

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EPILOGUE

Two quite separate policy-related areas have been addressed in this series: methods of funding vocational/special education, and relative benefits versus expenditures for different employment training systems for moderately and severely handicapped persons. A brief synthesis of findings within each domain is presented below.

Drewes' manuscript begins with a thorough treatment of funding provisions in the present vocational educational legislation. Throughout the paper, he develops the argument that categorical funding provisions for vocational/special education should be maintained in the future reauthorization. He argues persuasively that a special categorical grant within the legislation would, at once, remove the necessity for the cumbersome and unpopular set-aside provision, and indicate a continued national concern for vocational/special education. Beuke's paper acknowledges the difficulty local and state vocational administrators have experienced with the set-aside provisions, but recommends maintaining the provision and altering the implementing policies to make it more congruent with the least restrictive mandates of P. L. 94-142. He also recommends that OVAE target increased technical assistance to states concerning the legislative intent of the provisions, and circumscribing the accounting processes involved in satisfying the matching and excess cost provisions.

Benson and Hoachlander have taken a more radical and prescriptive approach to the reauthorization of the vocational education legislation. They share Drewes' concern, in that "reauthorization should seek to centralize national objectives while decentralizing the process for meeting them." Although Beuke differs from the other authors in his satisfaction with levels of federal regulation of the funding processes, all of the authors are stead-

fast in their concern that vocational education reauthorizing legislation maintain a major commitment to handicapped and disadvantaged students. In particular, Benson and Hoachlander are to be congratulated for their thoughtful application of economic and educational finance concepts to their proposed model.

As appropriations and expenditures in education continue to shrink, special interest groups at all governmental levels will need more and more persuasive documentation of their program merits to maintain funding levels. An analysis that may be particularly powerful in this regard is the subject of the last two papers in this series - cost/benefit analysis. Schneider et al., and Wehman and Hill are to be applauded for their timely efforts documenting the relative merits of competitive employment training for handicapped individuals long-considered to be unemployable. An expansion of empirical information demonstrating the cost/beneficial aspect of vocational/special education and training should provide a powerful tool for vocational/special educators as they compete for declining educational resources.

A summary of the manuscripts contained in this policy paper series suggests that the federal reauthorizing legislation should continue to target handicapped and disadvantaged individuals as primary recipients of vocational education, and that these efforts are likely to result in decreased federal subsidies to able-bodied workers, and increased economic productivity nationwide. These are outcomes we can ill-afford to be without.